

U.S. Army Corps of Engineers

Kansas City District



Demolition Design Report

Operable Unit 2 - Building Demolition

95% Completion Phase

Cornell-Dubilier Electronics Superfund Site
South Plainfield, NJ

USACE Contract No. W912DQ-06-D-0006
Task Order No. 0001

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PIRNIÉ**

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Introduction

SECTION

1

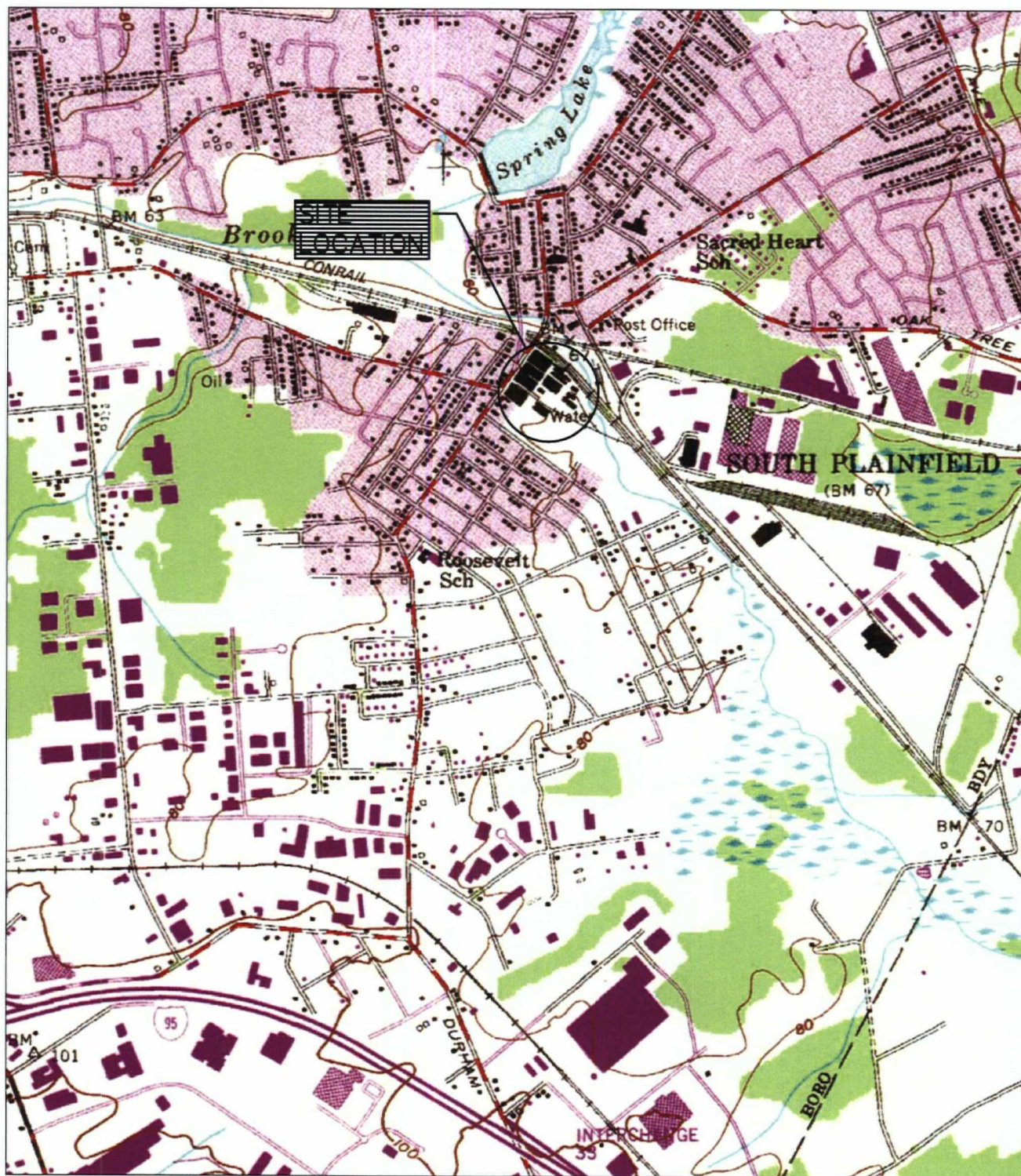
1.1 Project Background

The Cornell-Dubilier Electronics Superfund Site (the Site) is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey (Figure 1).

The Site consists of approximately 26 acres including the Hamilton Industrial Park, contaminated portions of the Bound Brook adjacent to and downstream of the industrial park, and contaminated residential, municipal, and commercial properties in the vicinity of the former Cornell-Dubilier Electronics Corporation, Inc. (Cornell-Dubilier Electronics) facility. The Site contains 18 subdivided buildings, numbered 1 through 18, some of which are currently used by several commercial and light industrial operations. Plan and elevation views of the Site buildings and storage tanks are shown on the Contract Drawings.

The developed portion of the facility (the northwestern portion) comprises approximately 45 percent of the total land area and contains buildings, a system of catch basins to channel stormwater flow, and paved roadways. Several of the catch basins drain into a stormwater collection system whose outfalls discharge at various locations along Bound Brook. The other 55 percent of the property is undeveloped and is predominantly vegetated. The central part of the undeveloped portion is primarily an open field, with some wooded areas to the northeast and south, and a deteriorated, partially paved area in the middle. The northeast and southeast boundaries consist primarily of wetland areas (Foster Wheeler, 2002).

The Site remediation was separated into multiple Operable Units. Operable Unit-1 (OU-1) consists of the residential, commercial, and municipal properties in the vicinity of the former



SOURCE: U.S.G.S. TOPOGRAPHIC MAP,
7.5 MINUTE SERIES, PLAINFIELD, NEW JERSEY
QUADRANGLE, 1955, PHOTOREVISED 1981

**MALCOLM
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U.S. ARMY CORPS OF ENGINEERS
CORNELL-DUBILIER SUPERFUND SITE
OU-2 BUILDING DEMOLITION
SOUTH PLAINFIELD, NEW JERSEY
CONTRACT NO. W912DQ-06-D-0006

**SITE LOCATION
MAP**
SCALE AS NOTED

MALCOLM PIRNIE, INC.
SEPTEMBER 2006
FIGURE 1



Cornell-Dubilier Electronics facility and is being addressed by others. OU-2 consists of contaminated facility site soils and buildings which are being addressed by Malcolm Pirnie, Inc. This design addresses demolition of the existing site buildings; site soil contamination will be addressed through separate design documents. The groundwater and sediments in the adjacent Bound Brook will be addressed by the USEPA as part of future Operable Units. The response action selected in the Record of Decision (ROD) dated September 2004 for OU-2 buildings includes:

1. The demolition of the 18 on-site buildings; and two storage tanks.
2. Transportation of the building debris off-site for disposal, with treatment as necessary; and
3. Relocation of eligible tenants at the former Cornell-Dubilier facility buildings pursuant to the Uniform Relocation Act, as necessary. The Government will be responsible for relocation of eligible site tenants.

1.2 Purpose and Scope

This Demolition Design Report (DDR) provides an overall description of the design for the demolition and removal of the on-site buildings and structures, including removal of slabs and below grade foundations. Site-specific details, such as building demolition sequencing and site-specific operations, are also addressed.

1.3 Description and Background

Cornell-Dubilier Electronics operated what is now the Hamilton Industrial Park from 1936 to 1962, manufacturing electronic components including capacitors. Polychlorinated biphenyls (PCBs) and chlorinated organic degreasing solvents were used in the manufacturing process, and it has been alleged that during Cornell-Dubilier Electronics' period of operation the company disposed of PCB-contaminated materials and other hazardous substances at the facility. A former employee has claimed that the rear of the property was saturated with transformer oils and that capacitors were also buried behind the facility during the same time

period (Foster Wheeler, 2002). Based on historic site practices, portions of the Site have the potential to be contaminated with asbestos, lead, mercury, PCBs, TCE and dechlorination products, and other constituents of potential concern (COPCs).

1.4 Pre-Design Investigation – Buildings Data Summary Report

1.4.1 Sampling and Data Collection

Appendix A to the contract specifications contains a Data Summary Report (DSR) which summarizes all data collection activities performed in 2006 by Malcolm Pirnie. Data collected previously by others is also presented and referenced.

1.4.2 Analytical Results and Reporting

The locations and quantities of asbestos-containing materials and lighting ballasts to be removed as a result of the field identification program are shown on the Contract Drawings. Areas of PCBs and metals contamination of buildings are also shown on the contract drawings.

Potential PCB-containing materials observed during the field survey were limited primarily to light fixtures, with the exception of the three transformers mounted at grade at the northeast corner of Building 15. These transformers were not sampled, but are assumed to contain PCBs.

PCBs were also detected in wall and floor cores obtained from several buildings and within paint collected from wall surfaces.

Other potential hazardous materials identified during the field sampling program were generally limited to household hazardous wastes, such as small quantities of gasoline, lubricants, paint, weed killer, pool chemicals, and small propane tanks, which are included in the waste inventory tables on the drawings.

Building Cluster Design

SECTION

2

2.1 General

As mentioned in the previous section, a total of 18 buildings and two storage tanks exist within the site boundaries. Many of the buildings were constructed at or prior to the turn of the century and have potential historical significance. Part of the demolition design scope is to perform archaeological research to determine the historical significance of the site buildings. A number of the buildings on-site are also currently occupied by business tenants. The USACE Baltimore District is currently in the process of evaluating relocation of the business tenants to allow demolition to proceed. The relocation of site tenants is therefore not the responsibility of the Contractor and is not a requirement of the contract documents.

Based on current tenant information and the location and interconnection of structures and supporting infrastructure, buildings/structures were combined into discrete groups or "clustered" into 12 clusters (see Contract Drawing G-03). Each cluster contains one or more buildings/structures. The cluster formatting of the contract and bidding documents prepared for use by the demolition Contractor allows the USACE to obtain bids for each cluster, group(s) of clusters, or the entire project site. This flexibility will allow the USACE and the USEPA to choose the timing and allocate funds for the most advantageous staging of the demolition of buildings, allowing for consideration of tenant relocation, the results of the archaeological surveys/documentation, and funding considerations.

2.2 Cluster and Building Description

2.2.1 General

As previously noted, there are 18 buildings and two storage tanks included in the 12 building clusters. This section provides a brief description of each of the building/structure clusters. Plan and elevation views as well as color photographs of the buildings and structures are included on contract drawings G-04 through G-52. The building dimensions were measured during the pre-design field investigation to prepare the elevation views shown on the drawings.

Most of the site buildings are open-bay, single-story masonry structures with steel roof framing and wood roofing decks. Interior masonry partition walls divide the larger buildings in Clusters 1, 2, and 3 into three or more separate tenant spaces. The attached Table 2-1, Structures to Be Demolished, includes a summary of building and structure features by cluster and identifies key elements of each building.

Since there are no existing as-built engineering drawings of the existing structures, it has been assumed that the buildings are constructed on 12-inch thick spread footings which extend to four feet below grade. All buildings on the site have complete or partial floor slabs. All of the buildings have interior columns except buildings 7, 8, 11, and 12. Building height varies from approximately 10 feet to approximately 48 feet, with an average height of approximately 20 feet. Dimensions were recorded during field reconnaissance by Malcolm Pirnie in 2006.

The only building with a basement is Building 15. The basement underlies the entire length and width of the former engine room and extends to approximately six feet below grade. The basement contains six individual piers consisting of three-foot thick concrete walls formed into squares and rectangles as supports for the suspended first floor slab above. Access to the basement is through Building 18.

Building 16, the former boiler house, contains a concrete coal bunker suspended from the ceiling which is approximately 20 feet wide, 20 feet tall, and extends the length of the building from north to south.

**TABLE 2-1
Cornell-Dubiller Electronics Superfund Site OU-2 Structures To Be Demolished**

Cluster Number	Building Number	Type of Construction	Roof Framing	Dimensions (ft) and Total Area of Building (SF)	Approx. Max Height (ft)	Former Building Designation / Year Constructed ¹	Current Use/Tenant
1	1	Single Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss	263 ft x 184 ft 48,400 SF	26	Storeroom / Etching / 1913	Spring Coil Bedding, Inc.
	1A	Two Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss		26 (Second Floor)	Testing / 1914	Vacant
	1B	Single Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss		26	Forming Tanks / 1914	Vacant
	1C	Single Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss		26	Forming Tanks/ Reactors / 1914	Vacant
	1D	Single Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss		26	Office / 1914	Vacant
2	6	Single Story Masonry Structure with a Concrete Roof	18' deep Concrete Beams	100 ft x 51 ft 5,100 SF	20	Wax Room / 1913	Vacant
	2	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins	275 ft x 88 ft 24,500 SF	18	Aging Racks / 1916	A&C Catalysys, Inc.
	2A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		18	Aging Racks / 1916	Spice Distributor
	3/4	Single Story Masonry Structure with a Wood Roof	Steel Framing / Trusses	100 ft x 30 ft 3,000 SF	48	Plating / Photo Etching / 1917-1926	Complete Liquidation Company
	4A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins	275 ft x 142 ft 39,100 ft	12	Lab / 1917-1926	Complete Liquidation Company
3	5	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins	274 ft x 142 ft 43,900 SF	20	Winding Room / 1917-1926	Fayette Trading
	5A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		20	Paint Spray / Washing / Drying Room / 1917-1926	Complete Liquidation Company
4	8	Single Story Masonry Structure with a Concrete Roof	Steel Girders	257 ft x 44 ft 11,300 SF	15	Electric Generator Area / post-1930	Keystone Plastics
5	9	Single Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss	256 ft x 185 ft 47,400 SF	24	Etching Room / 1918	Vacant
	9A	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		24	Forming Tanks / 1916	Vacant
	9B	Single Story Masonry Structure with a Wood Roof	Steel Girders / Timber Purlins		15	Forming Tanks / 1916	R&M Manufacturing, Inc.
	9C	Single Story Masonry Structure with a Wood Roof	Steel Sawtooth Truss / Steel Girders / Wood Purlins		15	Etching Acid Room / 1950	Central Jersey Trading Company
	17	Single Story Masonry Structure with Stucco Exterior and a Wood Roof	Wood Joists		13	post-1947	Office associated with Bldg. 9B

**TABLE 2-1
Cornell-Dubilier Electronics Superfund Site OU-2 Structures To Be Demolished**

Cluster Number	Building Number	Type of Construction	Roof Framing	Dimensions (ft) and Total Area of Building (SF)	Approx. Max Height (ft)	Former Building Designation / Year Constructed ¹	Current Use/Tenant
6	10	Single Story, Steel Framing and Exterior Wall Panels with a Steel Roof	Steel Trusses	104 ft x 50 ft 5,200 SF	19	Oil House / 1917-1928	Chamberlain Power & Electric, Inc.
	10A	Single Story, Steel Framing with a Steel Roof	Steel Framing	40 ft x 20 ft 800 SF	10	Waste Shed	Vacant
7	11	Single Story, Steel Arch with Corrugated Steel Exterior Panels	Steel Arches 4' oc with Steel Bridging between arches	200 ft x 41 ft 16,400 SF	20	c. 1947	Complete Liquidation Company
	12	Single Story, Steel Arch with Corrugated Steel Exterior Panels	Steel Arches 4' oc with Steel Bridging between arches		20	1950	LIT Automotive
8	13	Heavily Reinforced Single Story Masonry / Concrete Structure with a Concrete Roof	18' deep Concrete Beams	103 ft x 42 ft 4,400 SF	20	Machine Shop / 1912 or earlier	Nesser Metals & Alloys, LLC
	15	Single Story Masonry Structure with a Wood Roof	Steel Beams / Steel Purlins / Wood Deck	117 ft x 63 ft 7,400 SF	24	Engine Room / 1914	Franz Cabinet Company
	16	Single Story Concrete / Masonry / Steel Structure with a Concrete / Steel Roof	50% Concrete / 50% Steel Beams / Corrugated Steel Deck		40	Boiler House / 1917-1926	Townsend Bros. Moving & Storage
	18	Single Story Masonry Structure with a Half Wood and Half Concrete Roof	Wood Joists	17 ft x 9 ft 200 SF	14	1917-1926	DSC of Newark Enterprises Inc.
9	7	Single Story Wood Framing with a Wood Roof	Wood Joists	67 ft x 27 ft 1,800 SF	20	Carpenter Shop / 1917-1926 for foundation; superstructure likely post-1930	Dove Construction
10	N/A	Steel Water Tower	NA	25 Dia. / 700	110	N/A	Out Of Service
11	14	Single Story Wood Framing with a Wood Roof	Timber Trusses Wood Purlins and Joists	102 ft x 51 ft 5,200 SF	28	1917-1926	Vacant
12	N/A	Steel Oil Storage Tank	NA	27 Dia. / 600	30	N/A	Out Of Service

¹ Former Building Designation per Drawing Cornell-Dubilier Electric Corp., ET AL, Dated March 17, 1954

Project Coordination

SECTION

3

3.1 Coordination with Federal, State and Local Authorities

The project is a Superfund site. Accordingly, the Contractor is responsible for obtaining all local, state, and federal permits or permit equivalencies necessary to perform the work defined in this contract. The Contractor shall submit all permit equivalency applications to the Contracting Officer for review prior to submitting it to the applicable local, state or federal agency. All permits and permit equivalencies are to be obtained in the Contractor's name. All fees associated with the permits and permit equivalencies are to be borne by the Contractor. All hazardous waste manifests are to list the USEPA as the generator. Local permits, approvals, or notifications which will require compliance during demolition are as follows:

- Building/demolition permit;
- Street closure/traffic pattern alteration;
- Local utility notification for abandonment and disconnection of water, power, sewer, telephone and gas service to the various buildings at the site;
- South Plainfield Disaster Preparedness Agency;
- NJDEP Storage Tank Closure Bureau;
- USEPA Asbestos Removal Notification; and
- Trucking and Waste hauler Permits;

Coordination with the local authorities will be required to complete demolition of the buildings which border Hamilton Boulevard, specifically Clusters 1, 2, and 3. The excavation and removal of the footings of these structures along Hamilton Boulevard may require interruption or relocation of the buried telephone and gas facilities in that area from New Market Avenue to the northern edge of the site. Road closures and detours will need to be coordinated with the municipality of South Plainfield. The

specifications indicate the required permit requirements, work plans, environmental monitoring, and control measures to be taken during the project to mitigate project impacts on the surrounding community, as discussed in the following sections.

The USEPA and USACE will coordinate site access and tenant relocation with the site property owner and will arrange public notification meetings to brief local citizen and business owners regarding the project and measures being undertaken to accommodate their needs.

3.2 Site Utilities and Coordination

The utilities which currently serve the site are outlined below. This limited utility site information was collected by Malcolm Pirnie through on-site interviews with site owner management personnel in 2006, and also via a site drawing provided by the site owner. This information is presented on the Site Utility Drawing, Contract Drawing G-53

3.2.1 Electric Power

Electric power for all buildings and structures except for Building 1 and Building 2 is delivered via an overhead pole-mounted high voltage system which enters the site at the southwest corner at Hamilton Boulevard and New Market Avenue. The distribution line extends eastward along the south side of Building 5 to the rear of Building 12, and then northward to the north side of the oil storage tank. From there it splits and runs north to the south side of Building 9C, west to Building 10, and northeast to the north property line. From the north property line, it extends westward to Buildings 7 and 8. The electrical lines described above are constructed on a PSE&G easement. Buildings 1 and 2 are connected to the power lines on Hamilton Boulevard. The disconnection of the individual power services to the buildings on-site will not pose any significant difficulties. The close proximity of the poles to the south wall of Building 5 however, may require temporary deenergization or relocation of incoming site power while Building 5 is being demolished. Alternatively, the poles could be braced, or temporary generators could be brought to the site and connected.

3.2.2 Natural Gas

Buried natural gas lines enter the site via the main on Hamilton Boulevard and extend eastward as far as Building 14. There are reportedly individual gas shutoff valves at each building which must be located to disconnect and remove each structure; these valves have not been observed by Malcolm Pirnie. The route of the buried gas piping which was marked by a utility location service in the spring of 2006 is shown on the Site Utility Drawing Contract Drawing G-53.

3.2.3 Telephone and Communication Cable

Telephone cables enter the Site from Hamilton Boulevard primarily between Buildings 1 and 2. Individual tenants must be contacted for disconnection notices.

3.2.4 Site Water Systems, Including Fire Protection

The site domestic and fire protection systems are connected to a 36-inch main which transects the Site from southwest to northeast, originating at Building 5 and extending northward across the site on the north side of Building 11 and the south sides of the oil tank and Building 14. The known location of the fire protection loop which serves virtually all of the on-site buildings which have internal sprinklers mounted on their ceilings is shown on the Site Utility Drawing, Contract Drawing G-53. Surface scans prior to excavation and test pit work by the Contractor will be necessary to locate domestic water service connections. Since it is undesirable to repeatedly de-energize and re-energize the fire protection loop at the site, provisions have been included in the Bid Schedule to abandon the fire protection lines on the exterior of the buildings while the system is charged, without the need for shutdowns.

According to the site owner, the capability to disconnect the fire protection loop via existing functioning valves for the site buildings is as follows:

Cluster 5: Buildings 9 and 9A can be isolated as a unit;

- Cluster 6: Building 10 can be isolated individually;
- Cluster 8: Buildings 13, 15, 16, and 18 can be isolated as a combined unit, however the hydrant in front of Building 15 would need to be shut off, possibly requiring the installation of a new replacement hydrant to meet fire code requirements;
- Cluster 7: Buildings 11 and 12 can be isolated individually;
- Cluster 11: Building 14 will require an exterior line stop for disconnection while the system is energized;
- Cluster 9: Building 7 is not connected.

The remaining Buildings in Clusters 1, 2, 4, and 5 cannot be isolated individually, and would require shutdown of the entire fire protection system for disconnection and demolition to proceed.

3.2.1.1 Building Sanitary Sewers

The building sanitary sewers will require disconnection during demolition of the buildings. The site sanitary sewer runs along the north and eastern sides of the Site and leaves the Site at the intersection of Spicer Avenue and Fulton Street. Flow is generally to the north and east and reportedly connects to the sewer on the east side in the vicinity of Building 13. Surface scans prior to excavation and test pit work by the Contractor will be necessary to locate sanitary sewer service connections.

3.2.1.2 Site Drainage

The location of known site catch basins and drainage piping is shown on the Site Utility Drawing, Contract Drawing G-53. Surface scans prior to excavation and test pit work by the Contractor will be necessary to locate site drainage piping. Roof drainage piping will be disconnected at the perimeter of each building being demolished. The site drainage inlets will be temporarily blocked during construction to prevent the entry of potentially

contaminated runoff until the slab restoration, including pavement installation, has been completed. Once slab restoration is completed, the temporary closures will be removed to once again facilitate site drainage.

3.3 Utility Contacts

Coordination with utility owners will be required prior to and during demolition to plan for outages or permanent disconnection and abandonment of utility connections. As previously mentioned, The Site Utility Drawing, Contract Drawing G-53, indicates the known locations of buried and overhead mains and service connections based upon field survey and location by the buried utility locating service, and information provided by the site owner. This drawing and the scope of the planned demolition project will be reviewed with the operators of the various utilities which serve the site by Malcolm Pirnie during the 95% completion phase to gain their input and concurrence; the 75% design documents have been forwarded to the utility companies for their information.

A summary of contact information for on-site utilities is provided in Table 3-1.

**TABLE 3-1
UTILITY CONTACT INFORMATION**

Utility	Owner	Contact Person	Address	Phone Number
Water	New Jersey American Water	Michael Wolan	120 Raider Boulevard P.O. Box 11204 Belle Mead, NJ 08502	(908) 301-3025
Sanitary Sewer	South Plainfield Sewer Utility	Joseph Glowacki	2480 Plainfield Avenue South Plainfield NJ 07080	(908) 220-7711
Gas	Public Service Electric & Gas Co.	Richard Weger	40 Rock Avenue Plainfield, NJ 07063	(908) 668-3837
Electric	Public Service Electric & Gas Co.	Rudy Torres	472 Weston Canal Road Somerset, NJ 08873	(732) 764-3127
Telephone	Verizon Communications	Gary S. Stevenson	445 Georges Road North Brunswick NJ 08902	(732) 418-2620

Demolition Components

SECTION

4

4.1 Demolition Sequence

Initial demolition efforts may be directed at the buildings along the southern and eastern ends of the Site. Buildings 14, 5A, 10, 11, and 12 can be isolated from existing utilities and removed as discrete entities. Demolition of Cluster 8, which includes Buildings 13, 15, 16, and 18, will preferably be done as a unit since they are all fed by the underground fire suppression system via a common connection on the south side of Building 15. Demolition of Clusters 1, 2, and 5, which comprise more than 50 percent of the site buildings, must be done as a unit since the fire suppression system must be completely shut down for that work to be completed and will require that all site tenants be relocated prior to that point in time. All site tenant relocations will be the responsibility of the Government.

The demolition of the elevated water tower should likely follow the demolition of Building 14 to allow for access by heavy equipment from the east, and should precede the demolition of the buildings in Cluster 8 due to the tower height and proximity to those buildings.

4.2 Cluster Demolition Activities

Demolition activities for each individual cluster will generally include the following activities in the approximate sequence shown. Each of these activities is briefly discussed in the following subsections.

- Prepare Schedules and Submittals
 - Implement Site Environmental Monitoring and Controls
-

- Sample and Characterize Tank Contents and Hazardous Substances
- Remove Asbestos
- Demolish Buildings and Structures
- Handle and Dispose of Waste Materials
- Backfill Placement and Slab Restoration
- Closeout and Demobilization

4.2.1 Schedules and Submittals

The Contractor will be required to develop an overall project schedule and individual cluster project schedules. Additionally, the Contractor will be required to develop work plans which will address the entire site and incorporate the specific measures to be employed for each cluster to be demolished, including Soil Erosion and Sediment Control, Excavation and Material Handling / Reuse, Site Security, Quality Control Traffic Control, Pest and Rodent Control, Waste Management, and Sampling and Analysis. The details for the contents and preparation standards for each of these plans are contained in the contract specifications. Guidance for Dust Control, Spill Prevention, and Site Safety and Health are discussed in Section 5.0, Health and Safety.

4.2.2 Site Environmental Monitoring and Controls

Prior to demolition, the Contractor will be required to mobilize temporary facilities, erect security fencing around the perimeter of the work areas (i.e., a fenceline around each cluster), and enact measures to control the impact of the project on the environment and the neighboring residents as discussed in the remainder of this section. The Contractor lay down, storage and stockpiling areas will generally be situated in undisturbed areas as shown on Contract Drawing G-03. The locations and conceptual traffic patterns shown on G-03 are schematic, based upon beginning of demolition on the eastern side of the site. Upon removal of each structure, and as the relocation of business tenants from the site proceeds, the available open space will expand and potential traffic interferences will diminish, providing additional opportunities to reroute traffic on-site

and to optimize stockpile locations. The Contractor trailers will be located within the area shown on G-03.

4.2.2.1 Site Security

The Contractor will be required to provide continuous security at the construction site during all non-work times, including overnight hours, weekends, and holidays. In addition, prior to commencement of any demolition, excavation, or construction work at any cluster at the Cornell-Dubilier Site, a six-foot high chain link fence with gates will be installed around that cluster undergoing demolition, approximately ten feet from the demolition/excavation limits, as shown on the contract drawings. Upon the completion of all cluster-related remedial action activities, and with the approval of the Contracting Officer, the fencing will be removed.

4.2.2.2 Stormwater Control and Erosion / Sediment Control

Stormwater control is necessary to prevent the flow of uncontaminated runoff into excavations and minimize the quantity of water to be treated and disposed. Means and methods for diversion of stormwater and minimization of potential for erosion will be determined by the Contractor and discussed in the Erosion and Sediment Control Plan. Stormwater control will include sequencing work to limit open areas which would produce runoff into excavations, minimizing the size of excavations left open, covering open areas to prevent contact between contaminated materials and precipitation, and may include temporary sumps and pumping. Any stormwater that does enter the excavations will be considered impacted and will require collection and treatment prior to disposal.

4.2.2.3 Traffic and Pedestrian Control

The primary construction access to the site is from Hamilton Boulevard at the southwest corner of the site as shown on G-03. Alternate site access could be provided by construction of a temporary access road in the unimproved section of Garibaldi Avenue from Spicer Avenue to the south side of Cluster 7. This would allow construction and

haul vehicles to avoid the traffic congestion at the intersection of Hamilton Boulevard and New Market Avenue. It may be necessary to provide alternate site access during the removal of Building 5 due to the proximity of the south side of the building to the main site access and to the incoming power poles on the south side of the building.

Traffic control measures will be necessary on Hamilton Boulevard when trucks are entering and exiting the site. Temporary controls will include the use of signs to advise of construction ahead, flagmen, and temporary barriers such as cones, safety fences, and safety tape. Pedestrian controls are anticipated for the duration of the work along Hamilton Boulevard. Closure of the sidewalk on the east side of Hamilton Boulevard during demolition of the west sides of Clusters 1, 2, and 3 will be necessary to protect the public.

The traffic control plan to be prepared by the Contractor will address traffic and pedestrian control means and methods. The plan will also identify haul routes to and from the site. Haul routes and alternatives will be discussed with the Borough of South Plainfield. Traffic control and pedestrian control within the site will also be addressed in the Contractor's traffic control plan, and will be based upon the particular cluster being demolished, the staging of cluster demolition, and active utilities during various project stages.

4.2.2.4 Pest and Rodent Control

There is a potential for neighborhood disturbances caused by off-site travel of pests and rodents that may be living in structures to be demolished. The Contractor is required to employ a licensed professional exterminator prior to beginning demolition to prepare and submit a pest and rodent control plan, to implement the pest control measures outlined, and to make periodic site visits to review the success of measures in place and revise the practices as necessary. At the conclusion of demolition, the exterminator is required to return to the site to remove all residual bait, traps, and similar devices.

4.2.3 Sampling and Characterization

All liquids, sludges, and solids from tanks, drums, and other containers on-site are to be sampled and the contents analyzed in accordance with the requirements of the specifications. Sampling procedures are to be in accordance with procedures in the appropriate USEPA and NJDEP guidance documents. Field log documentation of all drum sampling activities and a chain of custody for the samples collected are to be maintained at the site.

4.2.4 Asbestos Abatement

Prior to the demolition of each structure which contains asbestos-containing materials as quantified on the contract drawings, the Contractor will provide the necessary notification to the USEPA and will install all temporary equipment, barriers, and facilities necessary for worker and environmental protection. All asbestos workers are to be trained and certified to perform asbestos removal work. All asbestos removal, transportation and disposal, air monitoring, decontamination, and related tasks are to be performed in accordance with the contract specifications.

4.2.5 Building and Structure Demolition

Demolition of each building and structure will commence following the removal of hazardous substances and verification that all utilities have been disconnected and abandoned. Since recent limited sampling indicates that the existing roofing materials contain asbestos, the roofing must be removed and disposed of separately as asbestos-containing materials prior to demolition of the remainder of the structure. The specifications contain a notice to the Contractor that the steel framing and other building components have not been tested for lead-based paint, but rather it has been assumed that the paint is lead-based. The paint has been tested for PCBs, however, and the results indicate that the paint in some areas does contain PCBs. The Contractor will be required to sample and decontaminate all building steel to be recycled and to coordinate disposal

of all building materials within the requirements of the disposal facility operating permits.

PCBs were also detected in paint chip samples and concrete floor and masonry wall cores collected in April 2006. One sample contained over 50,000 mg/kg, and other samples had levels in the hundreds of ppm. All building materials with concentrations of PCBs greater than 50 mg/kg must be disposed of as PCB bulk product waste or PCB remediation waste in accordance with applicable regulations.

The light weight of the framing systems for the buildings at the site and their relatively low profile do not pose any particular challenges to demolition. There is adequate space around most of the buildings to allow demolition to proceed rather quickly, with the exception of the west side of Clusters 1, 2, and 3. Their proximity to Hamilton Boulevard will require traffic and utility protection and control for removal of both above- and below-grade sections of the buildings, as previously discussed. Furthermore, the presence of tenants in adjacent or proximate buildings is likely, especially at the outset of demolition activities. The Contractor is required to exhibit extreme caution when operating under this scenario.

The specifications for demolition require the Contractor to minimize the volume of soil removed as part of foundation demolition to reduce the quantity of contaminated soil to be stockpiled, tested, and disposed of under this project. The Contractor's Excavation Plan is to propose the equipment and methods which will be employed to limit the size of excavation necessary for foundation removal and to loosen and dislodge attenuated soils which may cling to below-grade concrete as it is removed. The Contractor is also required to submit a Excavation and Material Handling / Reuse Plan to outline methods that will be employed to comply with NJDEP on-site soil reuse requirements, should it be determined that excavated soils are within NJDEP contamination guidelines and can be reused on-site (see section 4.2.6 below).

4.2.6 Handling and Disposal of Materials

Uncontaminated Construction and Demolition (C&D) materials are to be transported directly from the site to a permitted disposal facility.

Material which is believed to be contaminated based upon previous testing, and all soil excavated for test pits, samples, and utility disconnection or abandonment, is to be stockpiled in a prepared, lined stockpile area as required by the specifications. The soils will then be sampled and tested for hazardous characteristics per the contractors approved sampling plan prepared in accordance with the requirements of the Contract Documents. Soils with contaminant concentrations which are below the New Jersey DEP's Impact to Groundwater Soil Cleanup Criteria (IGWSCC) concentrations may be reused on the site as foundation excavation backfill. If soils with contaminant concentrations below the IGWSCC but above the Residential Direct Contact Soil Cleanup Criteria (RDCSCC) or Non-Residential Direct Contact Cleanup Criteria (NRDSCC) are reused on-site, then they must be addressed with a Deed Notice if greater than the RDCSCC, and engineering controls if greater than the NRDSCC. Excavated soils must also possess adequate geotechnical characteristics for reuse. The Contractor is required to outline soil reuse approaches in his Excavation and Material Handling / Reuse Plan.

Contaminated C&D material disposal is dependent on the material waste characterization, including:

- Non-hazardous
- TSCA PCBs >50 ppm
- TSCA PCBs>500 ppm,
- RCRA Hazardous
- Mixed TSCA and RCRA, with PCBs > 50 ppm and < 500ppm
- Mixed TSCA and RCRA, with PCBs > 500 ppm

[NOTE TO REVIEWERS: the waste categories for PCBs > 50 ppm and > 500 ppm for porous material will be coalesced into one category (PCBs > 50ppm) for the 100% submittal]

As previously discussed in Section 1.4, sampling to determine the extent of PCB, mercury, and other metals contamination at the site was conducted in April 2006 during the Pre-Design Investigation. Material samples were taken for each cluster and included: paint chips, wall cores, floor cores, and window caulking. All results are presented in the Data Summary Report included as Appendix A to the contract specifications.

In order to estimate the quantities of contaminated C&D material which will require disposal as a hazardous material, the locations and concentrations of PCBs and RCRA metals (lead) were indicated on the Contract Drawings. The extent of contamination was indicated for the floors and walls of buildings where contamination was detected using different shading patterns for two PCB contamination (TSCA) concentrations corresponding to 50 ppm to 500 ppm and greater than 500 ppm, and for RCRA Metals.

The method for shading contaminated floors consisted of plotting the floor core locations on the Contract Drawings and shading the locations where contamination was present. For instances where floor contamination does not encompass the entire building, the shading was terminated approximately halfway between a contaminated floor core sample and a core sample where the contaminant in question, either PCBs (50 ppm to 500 ppm or greater than 500 ppm) or RCRA metals were not detected. The contaminated floor area quantities were then determined by measuring the shaded floor areas.

The extent of wall contamination for PCBs and metals was determined by the contamination level, as mentioned above, for the wall cores, paint chip samples, and window caulking. Wall shading consisted of plotting the sample locations and shading the locations where contamination was present. For those locations where paint chip sample concentrations were higher than the window caulking and wall cores, the area of the wall was shaded at the higher concentration. For instances where the wall

contamination did not extend around the entire building, the shading was terminated approximately half way between a contaminated wall sample and a wall core sample where contamination was not detected.

Contaminated soil disposal is also dependent on sampling and characterization according to the following categories:

- Non-hazardous reuse on-site, < IGWSCC and subject to conformance with NJDEP R/N DCSCC
- Non-hazardous but contaminated, > IGWSCC
- TSCA PCBs > 50 ppm and < 500 ppm
- TSCA PCBs > 500 ppm
- RCRA Hazardous
- Mixed TSCA and RCRA, with PCBs > 50 and < 500 ppm
- Mixed TSCA and RCRA, with PCBs >500 ppm

The volume of contaminated soils to be disposed of as hazardous material and the volume of contaminated concrete foundations resulting from contact with contaminated soils was determined by using previous site soil contamination mapping to estimate the percent of area of each building located where soil contamination has been documented. Figures 4-12 and 4-27 from the Remedial Investigation (RI) (Foster Wheeler 2002) were used to determine the extent of PCB contamination (PCBs >500 ppm). Figures 1 and 2 from the Final Transportation and Disposal (T&D) Feasibility Study Technical Memorandum (Malcolm Pirnie, July 2006) were used to determine the extent of potential RCRA Metals contamination. The boundaries of the different hazardous soils constituents were overlain onto the demolition site plan drawings. The soil trench that will be excavated during removal of slabs and footings was then segmented based on the various types of contaminants shown on the RI and T&D figures, and totaled into the categories listed above. Removed subsurface concrete was similarly segregated into the same categories based on proximate soil concentrations. The footings are assumed to be

a standard tee footing approximately one foot wide by four feet deep. The calculated volume of soil excavated for foundation removal includes the immediate area around the footing extending from the outside edge of the footing to grade on a 1:1 side slope.

Estimates by weight of the quantity of each non-hazardous and hazardous waste type and excavated soils are presented in the quantity takeoff in Appendix A.

4.2.7 Backfill and Slab Restoration

The area previously occupied by each building slab will be compacted and graded to remove surface irregularities. A non-woven geotextile will then be placed over the compacted subgrade, the area will be backfilled with dense graded aggregate, compacted to a dry density of 95 percent and graded to a minimum slope of 1.5 percent. The area will then be paved with three inches of bituminous surface course. The Contractor's proposed grading will address site drainage.

4.2.8 Closeout and Demobilization

Closeout and demobilization from the site will occur following the submittal of all required documentation to the Contract Officer, including record drawings, waste manifests, tank closure reports, health and safety clearance documents, and site photographs. Documentation submittal will occur simultaneously with the removal of all temporary facilities, equipment, trash, waste, and debris required by the contract specifications.

Health and Safety

SECTION

5

5.1 Site Safety and Health Plan (SSHP)

The Contractor is responsible for the health and safety of its employees as well as the actions of its subcontractors. The Contractor will therefore develop, implement, and oversee site safety and health procedures as required by the approved SSHP, prepared by the Contractor and reviewed by the Government Safety Officer in accordance with Technical Specification Section 01351 Safety, Health, and Emergency Response. The SSHP will establish, in detail, the protocols necessary for anticipation, recognition, evaluation, and control of hazards associated with each task performed. The SSHP will be considered a living document and will be updated as occupational health and safety conditions change over the course of the project. The minimum requirements of the SSHP are briefly described in the following sections.

5.1.1 Hazard / Risk Analysis

The SSHP shall include a safety and health Hazard/Risk Analysis for each site task and operation to be performed. The Hazard/Risk Analysis shall provide information necessary for determining safety and health procedures, equipment, and training to protect on-site personnel, the environment, and the public. The Hazard/Risk Analysis will include the following components:

- Site Tasks and Objectives Description
- Potential Hazard Description (Physical, Chemical, Biological)
- Air Quality Action Limits (Lead, Dust, Asbestos, Oxygen, Combustible Gas, Volatile Organic Compounds, PCBs, etc)

- Confined Space Entry Program
- Welding Program
- Activity Hazard Analysis

5.1.21 Staff Organization, Qualifications, and Responsibilities

The Contractor will be required to develop an organizational structure that sets forth lines of authority (chain of command), responsibilities, and communication procedures concerning site safety, health, and emergency response. At a minimum, the roles and responsibilities of the following personnel will be described:

- Safety and Health Manager
- Additional Professional Health and Safety Support Personnel
- Site Safety and Health Officer
- Safety and Health Technicians
- Occupational Physician
- Other Persons Certified in First Aid/CPR

5.1.3 Site Safety Reference Materials

The Contractor will be required to include safety-related references applicable to the project in the SSHP and maintain them at the field office as appropriate for the duration of the project.

5.1.4 Health and Safety Training Program

The SSHP will include a section describing training requirements. Copies of current health and safety training documentation will be submitted prior to initial entry onto the work site and attached to the SSHP. Copies of recent training certificates shall be kept on site, along with medical surveillance, fit testing, and a physician's or health care provider's written opinion that employee is fit for duty.

5.1.5 Personal Protective Equipment (PPE) Program

The SSHP will detail the minimum PPE ensembles (including respirators) and specific materials from which the PPE components are constructed for each site-specific task and operation to be performed based upon the Hazard/Risk Analysis. Components of levels of protection (B, C, D and modifications) will be relevant to site-specific conditions, including heat and cold stress potential and safety hazards

5.1.6 Medical Surveillance Program

The Safety and Health Manager, in conjunction with the Occupational Physician, will detail, in the Contractor's Safety and Health Program and the SSHP, the Medical Surveillance Program that includes scheduling of examinations, certification of fitness for duty, compliance with OSHA requirements, and information provided to the physician. The Medical Surveillance Program will include the following requirements:

- Frequency of Examinations
- Content of Examinations
- Information Provided to Occupational Physician
- Physician's Written Opinion
- Medical Records

5.1.7 Environmental Monitoring Program

An Environmental Monitoring Plan (EMP) shall be part of the SSHP and shall provide for Exposure Monitoring/Sampling Results for occupational and non-occupational exposures. The EMP will be designed to detect and quantify respirable dust, lead, volatile organic compounds, oxygen levels, combustible gases, airborne asbestos, and PCBs. Action levels will be established by the Contractor as specified in the Air Quality Limits component of the Hazard/Risk Analysis. A table titled "Minimum Acceptable Community Action Levels" included in specification Section 01351, Health, Safety, and Emergency Response, provides a listing of

minimum contaminant concentrations for respirable dust, lead, volatile organic compounds, oxygen levels, combustible gases, and airborne asbestos. Specification Section 13285, Removal and Disposal of PCB Contaminated Soils and Concrete, contains the permissible exposure limit (PEL) for PCBs.

Air contaminant levels will be monitored during each on-site activity in each medium through which contaminants can enter the worker's breathing zone or the neighboring properties (perimeter air sampling). At the beginning of each work activity requiring air monitoring/sampling, the Contractor shall complete monitoring/sampling at the locations and frequencies stated in the SSHP. The Contractor will be required to provide real-time air monitoring equipment for total organic vapors, explosive gases, oxygen, and respirable airborne particulates. Meteorological monitoring will also be conducted.

5.1.8 Heat and Cold Stress Monitoring Program

The Safety and Health Manager will develop a heat stress and cold stress monitoring program for on-site activities. Details of the monitoring program, including schedules for work and rest and physiological monitoring requirements, will be described in the SSHP.

5.1.9 Safety Procedures, Engineering Controls, and Work Practices

The SSHP will describe the standard operating safety procedures, engineering controls, and safe work practices to be implemented for the work covered. These will include, but not be limited to the following:

- General Site Rules and Prohibitions
- Excavation and Trench Safety
- Fall Protection
- Hazard Communication
- Hearing Protection and Noise Control
- Electrical Safety

- Sanitation
- Fire Protection
- Emergency Action Plan

5.1.10 Site Control Measures

To prevent the spread of contamination and control the flow of personnel, vehicles, and materials into and out of work areas, the following site control measures will be established and described in the SSHP:

- Work Zone Designations
- Site Control Log
- Communications Procedure
- Site Security

5.1.11 Contamination Monitoring, Decontamination, and Personal Hygiene Protocol

Personnel entering the exclusion or contamination reduction zones, or are otherwise exposed or subject to exposure to hazardous chemical-contaminated material vapors, liquids, or contaminated solids will adhere to approved contamination monitoring, decontamination, and personal hygiene protocol, which will be detailed in the SSHP.

5.1.12 Equipment Contamination Procedures

Vehicles and equipment will be monitored for contamination and decontaminated prior to leaving the site. The procedures for contamination monitoring and decontamination of vehicles and equipment will be addressed in the SSHP.

5.1.13 Emergency Equipment and First Aid Requirements

The SSHP will describe the emergency and first aid equipment that will be available on site. The following items, at a minimum, shall be maintained on site and be available for immediate use:

- First Aid Equipment
- Emergency Eyewashes and Showers
- Emergency Use Respirators
- Fire Extinguishers

5.1.14 Emergency Response Plan

An Emergency Response Plan will be developed and implemented as a section of the SSHP. In the event of any emergency associated with remedial action, the Contractor shall, without delay, alert all on-site employees that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the Contracting Officer's Representative; and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency.

5.1.15 Accident Prevention Plan

An Accident Prevention Plan will be developed and submitted for government approval prior to work initiation. The plan will be job-specific and include any unusual or unique aspects of the project. Daily safety and health inspections shall be conducted to ensure that the work is being performed in accordance with the SSHP and all USACE and OSHA regulations.

5.1.16 Dust Control Plan

A proposed Dust Control Plan will be included in the SSHP and be incorporated by reference in the Environmental Monitoring Plan. The Dust Control Plan will identify materials, equipment,

and methods to be used to monitor and control dust during project operations, including provisions for supplying clean water and trailer-mounted water spraying equipment. Visible dust located on the floors of buildings to be demolished will be handled as if contaminated with PCBs and will be cleaned up and removed prior to beginning demolition activities. The Contracting Officer will be consulted on the determination of proper handling procedures.

5.1.17 Safety and Health Phase-Out Report

A Safety and Health Phase-Out Report will be submitted within ten days following completion of the work, prior to final acceptance of the work. At a minimum, the report will include the following:

- Summary of Overall Safety Performance
- Final Decontamination Documentation
- Summary of Exposure Monitoring and Air Sampling
- Signature of Safety and Health Manager and SSHO

The following documents are required and must be evaluated, updated, and provided to the USACE along with the Contractor's Health and Safety Plan:

- Written Hazard Communication Program
- Written Noise and Hearing Conservation Program
- Written Confined Space Entry Program
- Excavation Safety Program
- Emergency Response Plan
- Emergency Evacuation Procedure
- Written Personal Protective Equipment Policy
- Respiratory Protection Program
- Medical Surveillance Program

5.2 Site Control and Work Zone

The building demolition and excavation work is being performed in phases (to be determined by the USEPA). Prior to the commencement of work in a given cluster, a six-foot high chain-link fence will be constructed around the entire cluster area. The contractor shall follow the Health and Safety requirements set forth in the technical specifications for site control.

Exclusion and work zones will be set up and maintained in accordance with the Contractor's Excavation and Material Handling Plan and Site Safety and Health Plan.

5.3 Air Monitoring

Equipment for continuous perimeter and personal air monitoring will be required for the duration of demolition, excavation, backfilling, and restoration activities at this property. Air monitoring will include equipment and monitoring frequencies required as described in Specification Section 01351 Safety, Health, and Emergency Response. Monitoring parameters and action levels are as indicated in Section 01351.

Construction Quantity Takeoff

SECTION

6

6.1 Construction Quantities

Material quantities per ton for masonry, wood, glass, steel framing members, above-grade concrete, and roofing materials are tabulated on individual sheets for each building cluster in the quantity takeoff spreadsheet which is provided in Appendix A. A summary sheet for all clusters is also included in the quantity takeoff spreadsheet. The non-hazardous fraction of these materials will be removed and disposed of off-site under the lump sum items for Above Grade Demolition and Off-Site Disposal which are included in the Bid Schedule. Roofing materials which contain asbestos are quantified on the Contract Drawings. Non-porous materials such as steel which are to be recycled must first be sampled, and if necessary, decontaminated in accordance with 40 CFR 761.79 Decontamination Standards and Procedures.

The quantity takeoff spreadsheet also includes material quantities for each building cluster for hazardous above-and below-grade concrete and masonry, contaminated soils, and quantities for bituminous surface course, dense graded aggregate, and geotextile. These material quantities are represented on the Bid Schedules as unit price items. The unit quantities shown on the quantity takeoff spreadsheet for these items have been rounded up on the Bid Schedules. The construction cost estimate backup data to be provided under separate cover includes a detailed explanation of assumptions and clarifications.

6.2 Construction Schedule

A detailed construction schedule meeting the requirements of Specification Section 01320A, Project Schedule is required to be prepared and provided by the Contractor based upon the scope of work awarded and the sequence of demolition approved by the USACE.

Design Drawings

SECTION

7

7.1 Design Drawings

The design drawings for the demolition are bound separately and include the following:

<u>DRAWING NO.</u>	<u>TITLE</u>
G-01	Cover Sheet
G-02	Index of Drawings, Legend, Abbreviations
G-03	Site Plan/Cluster Designations
G-04	Cluster 1-BLDGS 1, 1A, 1B, 1C, 1D, 6 Plan And Elevations
G-05	Cluster 1-BLDGS 1, 1A, 1B Miscellaneous Waste
G-06	Cluster 1-BLDGS 1C, 1D, 6 Miscellaneous Waste
G-07	Cluster 1-PCB Hazardous Floors and Walls
G-08	Cluster 1-BLDGS 1, 1A, 1B, 1C, 1D, 6 Photographs
G-09	Cluster 2-BLDGS 2, 2A, 3/4, 4A Plan And Elevations
G-10	Cluster 2-BLDGS 2, 2A, 3/4 Miscellaneous Waste
G-11	Cluster 2-BLDG 4A Miscellaneous Waste
G-12	Cluster 2-PCB Hazardous Floors and Walls
G-13	Cluster 2-BLDGS 2, 2A, 3/4, 4A Photographs
G-14	Cluster 3-BLDGS 5, 5A Plan And Elevations
G-15	Cluster 3-BLDGS 5, 5A Miscellaneous Waste
G-16	Cluster 3-PCB Hazardous Floors and Walls

<u>DRAWING NO.</u>	<u>TITLE</u>
G-17	Cluster 3-BLDGS 5, 5A Photographs
G-18	Cluster 4-BLDG 8 Plan And Elevations
G-19	Cluster 4-BLDG 8 Miscellaneous Waste
G-20	Cluster 4-BLDG 8 Photographs
G-21	Cluster 5-BLDGS 9, 9A, 9B, 9C, 17 Plan And Elevations
G-22	Cluster 5-BLDGS 9, 9A Miscellaneous Waste
G-23	Cluster 5-BLDGS 9B, 9C, 17 Miscellaneous Waste
G-24	Cluster 5-PCB Hazardous Floors and Walls
G-25	Cluster 5-BLDGS 9, 9A, 9B, 9C, 17 Photographs
G-26	Cluster 6-BLDGS 10, 10A Plan And Elevations
G-27	Cluster 6-BLDG 10 Miscellaneous Waste
G-28	Cluster 6-PCB Hazardous Floors and Walls
G-29	Cluster 6-BLDGS 10, 10A Photographs
G-30	Cluster 7-BLDGS 11, 12 Plan And Elevations
G-31	Cluster 7-BLDGS 11, 12 Miscellaneous Waste
G-32	Cluster 7-PCB Hazardous Floors and Walls
G-33	Cluster 7-BLDGS 11, 12 Photographs
G-34	Cluster 8-BLDG 13 Plan And Elevations
G-35	Cluster 8-BLDG 13 Miscellaneous Waste
G-36	Cluster 8-BLDG 13 Metal Hazardous Masonry Walls
G-37	Cluster 8-BLDGS 15, 16, 18 Plan Elevations
G-38	Cluster 8-BLDGS 15, 16, 18 Miscellaneous Waste
G-39	Cluster 8-BLDGS 15, 16, 18 Metal Hazardous Masonry Walls
G-40	Cluster 8-BLDGS 13, 15, 16, 18 Photographs
G-41	Cluster 9-BLDG 7 Plan And Elevations

<u>DRAWING NO.</u>	<u>TITLE</u>
G-42	Cluster 9-BLDG 7 Miscellaneous Waste
G-43	Cluster 9-BLDG 7 Photographs
G-44	Cluster 10-Water Tower Plan And Elevations
G-45	Cluster 10-Water Tower Miscellaneous Waste
G-46	Cluster 10-Water Tower Photographs
G-47	Cluster 11-BLDG 14 Plan And Elevations
G-48	Cluster 11-BLDG 14 Plan Miscellaneous Waste
G-49	Cluster 11-BLDG 14 Photographs
G-50	Cluster 12-Oil Tank Plan And Elevations
G-51	Cluster 12-Oil Tank Miscellaneous Waste
G-52	Cluster 12-Oil Tank Photographs
G-53	Site Utility Plan
G-54	Site Details 1
G-55	Site Details 2

7.2 Design Specifications

The technical specifications (bound separately) that are applicable to the demolition of the buildings on the Cornell-Dubilier property include the following:

**DOCUMENTS 00 INTRODUCTORY, BIDDING, AND CONTRACT
REQUIREMENTS BY USACE**

00101 BID SCHEDULES
00102 LIST OF DRAWINGS

DIVISION 01 GENERAL REQUIREMENTS

01110 SUMMARY OF WORK

01140	WORK RESTRICTIONS
01201	PRE-CONSTRUCTION AND PRE-WORK CONFERENCES
01202	PROJECT PROGRESS MEETINGS
01270A	MEASUREMENT AND PAYMENT
01312A	QUALITY CONTROL SYSTEM (QCS)
01320	PROJECT SCHEDULE
01330	SUBMITTAL PROCEDURES
01351	SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST)
01356A	STORM WATER POLLUTION PREVENTION MEASURES
01380	PROJECT PHOTOGRAPHS
01381	VIDEOTAPING
01420	SOURCES FOR REFERENCE PUBLICATIONS
01450A	CHEMICAL DATA QUALITY CONTROL
01451A	CONTRACTOR QUALITY CONTROL
01500A	TEMPORARY CONSTRUCTION FACILITIES
01540	SECURITY
01550	SURVEYING
01580	PROJECT IDENTIFICATION
01700	REMEDIAL PACKAGE CLOSEOUT AND RECORD DOCUMENTS

DIVISION 02 SITE CONSTRUCTION

02212	HANDLING AND DISPOSAL OF DRUMMED AND HAZARDOUS MATERIALS
02220	DEMOLITION
02310	EXCAVATION
02320	BACKFILL AND COMPACTION
02350	TRANSPORTATION AND DISPOSAL
02373	GEOTEXTILE
02650	STORAGE TANK REMOVAL
02742	HOT MIX BITUMINOUS PAVEMENT
02821A	FENCING

DIVISION 03 Not Used**DIVISION 04 Not Used****DIVISION 05 Not Used****DIVISION 06 Not Used**

DIVISION 07 Not Used

DIVISION 08 Not Used

DIVISION 09 Not Used

DIVISION 10 Not Used

DIVISION 11 Not Used

DIVISION 12 Not Used

DIVISION 13 SPECIAL CONSTRUCTION

13280A ASBESTOS HAZARD CONTROL ACTIVITIES

13281A LEAD BASED PAINT AWARENESS

13284 REMOVAL AND DISPOSAL OF POLYCHLORINATED
BIPHENYLS (PCBs)

13285 REMOVAL AND DISPOSAL OF PCB CONTAMINATED SOILS
AND CONCRETE

13286 HANDLING OF LIGHTING BALLASTS AND LAMPS
CONTAINING PCBs AND MERCURY

DIVISION 14 Not Used

DIVISION 15 Not Used

DIVISION 16 Not Used

Appendix A Data Summary Report OU2 - Building Demolition
95% Completion Phase

Appendix A

Quantity Takeoffs

Cornell-Dubiller Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Summary Sheet
95% Completion Phase

Cluster	QUANTITY SUMMARY									
	Masonry (Tons)	Glass (Tons)	Concrete (Tons)	Steel (Tons)	Wood (Tons)	Roofing Materials (Tons)	Excavation (Tons)	Bit. Surface Course (SY)	Dense Graded Aggregate (Tons)	Geotextile (SF)
1	996	35	3,146	32	186	422	2,274	7,828	10,020	66,181
2	1,377	15	3,495	14	142	534	2,445	9,212	13,992	82,895
3	619	7	1,714	9	88	329	1,474	5,881	7,329	52,920
4	419	4	1,207	1.5	N/A	85	786	1,970	2,396	17,728
5	668	20	2,274	49	118	441	2,043	6,287	9,049	56,580
6	N/A	N/A	487	58	N/A	N/A	830	1,231	1,998	11,080
7	N/A	N/A	882	99	N/A	N/A	1,550	2,983	4,140	26,840
8	1,155	10	3,105	22	13	81	1,433	2,422	11,683	21,784
9	N/A	N/A	175	N/A	9	14	322	454	743	4,089
10	N/A	N/A	27	23	N/A	N/A	254	218	488	1,983
11	N/A	N/A	264	N/A	40	38	355	963	1,143	8,882
12	N/A	N/A	38	24	N/A	N/A	206	193	419	1,735
Total	5,233	91	16,826	331	596	1,944	13,974	39,641	63,401	352,467

Notes:

1. Assumed density of 1.6 tons/cy for masonry.
2. Assumed density of 5 pcf for glass.
3. Assumed density of 2 tons/CY for concrete.
4. Weight of light weight steel is 490 lbs/cf
5. Assumed density of 4 pcf for wood roofing.
6. Assumed density of 15 pcf for roofing materials.
7. Assumed density of 120 pcf for soil.
8. Assumed density of 140 pcf for dense graded aggregate.



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	ASSUMPTIONS / REMARKS
	Length	Width	Height		
BUILDING AREA					
Area (Building 1, 1A, 1B, 1C, & 1D)	263	x 184	x N/A	48,392 SF	
Area (Building 6)	99	x 51	x N/A	5,049 SF	
			Total:	53,441 SF	
MASONRY⁽¹⁾					Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
BUILDING 1, 1A, & 1D					
Wall - PCB Contaminated < 500 ppm	245	x 1	x 25	290 Tons	
Wall - PCB Contaminated > 500 ppm	60	x 1	x 25	71 Tons	
			Total:	361 Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
BUILDING 1B & 1C					
Wall - PCB Contaminated < 500 ppm	200	x 1	x 17	161 Tons	
Wall - PCB Contaminated > 500 ppm	340	x 1	x 17	274 Tons	
			Total:	435 Tons	

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	ASSUMPTIONS / REMARKS
	Length	x	Width	x	
BUILDING 6					
Wall - PCB Contaminated < 500 ppm	110	x	1	x 20	104 Tons
Wall - PCB Contaminated > 500 ppm	100	x	1	x 20	95 Tons
	Total:			199	Tons
Glass⁽¹⁾					
BUILDING 1, 1A, & 1D					
Wall	308	x	N/A	x 25	3.9 Tons
	Total:			4	Tons
BUILDING 1B & 1C					
Wall	434	x	N/A	x 17	3.7 Tons
	Total:			4	Tons

Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.

Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.

Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.



Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY		ASSUMPTIONS / REMARKS
	Length	x	Width	x	Height		
BUILDING 1B & 1C - SAW TOOTH TRUSSES							
Glass (Building 1B & 1C) for 6 Trusses (80% Deducted for Wood and Roofing Materials)		202	x	N/A	x	41	25 Tons
		Total:					25 Tons
BUILDING 6							
Wall		249	x	N/A	x	20	2.5 Tons
		Total:					2 Tons
WOOD ⁽²⁾							
Roof Decking (Building 1, 1A, 1B, 1C, & 1D)		263	x	184	x	N/A	97 Tons
Roof Decking (Building 1B & 1C) for 6 Saw Tooth Trusses (20% Deducted for Glass)		202	x	41	x	N/A	80 Tons
Roof Decking (Building 6)		99	x	51	x	N/A	10 Tons
		Total:					186 Tons
Wood quantities are included in Bid Schedule under the lump sum item for Asbestos Abatement.							

Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for Wood and Roofing Materials.

Glass quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.

Wood quantities are included in Bid Schedule under the lump sum item for Asbestos Abatement.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	ASSUMPTIONS / REMARKS
	Length	x	Width	x	Height
ROOFING MATERIALS⁽²⁾					
Roofing Materials (Building 1, 1A, & 1D)	62	x	184	x	N/A
Roofing Materials (Building 1B & 1C) for 6 Saw Tooth Trusses (20% Deducted for Glass)	202	x	41	x	N/A
Roofing Materials (Building 6)	99	x	51	x	N/A
				Total:	422 Tons
STEEL FRAMING MEMBERS					
BUILDING 1, 1A, & 1D					
15 Columns - W12 x 65 at 25' High	15	x	N/A	x	25
Beams - W18 x 35	268	x	N/A	x	N/A
				Total:	17 Tons
BUILDING 1B & 1C					
12 Columns - W12 x 65 at 17' High	12	x	N/A	x	17
Beams - W18 x 35	404	x	N/A	x	N/A
				Total:	14 Tons
BUILDING 6					
1 Columns - W12 x 65 at 20' High	1	x	N/A	x	20
Beams - W18 x 35	51	x	N/A	x	N/A
				Total:	2 Tons

Roofing Material quantities are included in Bid Schedule under the lump sum item for Asbestos Abatement.

Assumed column weight of 65 pounds per foot.

Assumed beam weight of 35 pounds per foot.

Assumed column weight of 65 pounds per foot.

Assumed beam weight of 35 pounds per foot.

Assumed column weight of 65 pounds per foot.

Assumed beam weight of 35 pounds per foot.



Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)				TOTAL QUANTITY	ASSUMPTIONS / REMARKS
	Length	x	Width	x		
CONCRETE ⁽⁴⁾						
Above Grade Concrete						
Slab on Grade (Building 1, 1A, & 1D) - Non-Hazardous	77	x	184	x	0.51	539 Tons
Slab on Grade (Building 1B & 1C) - Non-Hazardous	120	x	140	x	0.51	640 Tons
Slab on Grade (Building 1B & 1C) - PCB Contaminated < 500 ppm	90	x	180	x	0.51	617 Tons
Slab on Grade (Building 1B & 1C) - PCB Contaminated > 500 ppm	20	x	20	x	0.51	15 Tons
Slab on Grade (Building 6) - PCB Contaminated < 500 ppm	25	x	25	x	0.58	27 Tons
Slab on Grade (Building 6) - PCB Contaminated > 500 ppm	45	x	75	x	0.58	146 Tons
Roof (Building 6) - Slab	99	x	51	x	1	374 Tons
Roof (Building 6) - 6 Beams (2' Deep x 1' Wide)	306	x	2	x	1	23 Tons
Total:						2,380 Tons
Below Grade Concrete						
Footings (Standard Tee) - Non-Hazardous	105	x	Refer to Excavation Section on Assumptions Sheet			47 Tons
Footings (Standard Tee) - TSCA Waste < 500 ppm	280	x	Refer to Excavation Section on Assumptions Sheet			124 Tons
Footings (Standard Tee) - TSCA Waste > 500 ppm	72	x	Refer to Excavation Section on Assumptions Sheet			32 Tons
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	455	x	Refer to Excavation Section on Assumptions Sheet			202 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	604	x	Refer to Excavation Section on Assumptions Sheet			268 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	207	x	Refer to Excavation Section on Assumptions Sheet			92 Tons
Total:						766 Tons
Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.						
Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.						

Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	ASSUMPTIONS / REMARKS
	Length	x	Width x Height		
EXCAVATION (1:1 SIDE SLOPES) ^(*)					
Excavation for Footers - Non-Hazardous	105	x	Refer to Excavation Section on Assumptions Sheet	139 Tons	Excavation quantities are included in Bid Schedule under unit prices for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	280	x	Refer to Excavation Section on Assumptions Sheet	370 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	72	x	Refer to Excavation Section on Assumptions Sheet	95 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	455	x	Refer to Excavation Section on Assumptions Sheet	601 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	604	x	Refer to Excavation Section on Assumptions Sheet	797 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	207	x	Refer to Excavation Section on Assumptions Sheet	273 Tons	
Total:				2,274 Tons	
SLAB RESTORATION (SLAB + 20 feet)					
3-inch Bituminous Surface Course (Building 1, 1A, 1B, 1C, & 1D)	283	x	204 x N/A	6,415 SY	See Assumptions Sheet for calculations.
3-inch Bituminous Surface Course (Building 6)	179	x	71 x N/A	1,412 SY	See Assumptions Sheet for calculations.
Total:				7,828 SY	



Cornell-Dubillier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 1

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	ASSUMPTIONS / REMARKS
	Length	x	Width x Height		
9-Inch Dense Graded Aggregate Subbase (Building 1, 1A, 1B, 1C, & 1D) ⁽⁶⁾	283	x	204 x 0.75	6,122 Tons	See Assumptions Sheet for calculations.
9-Inch Dense Graded Aggregate Subbase (Building 6) ⁽⁶⁾	119	x	71 x 0.75	601 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾	N/A	x	N/A x N/A	3,298 Tons	Equals volume for footers and soil removed from site.
			Total:	10,020 Tons	
Geotextile (Building 1, 1A, 1B, 1C, & 1D)	283	x	204 x N/A	57,732 SF	
Geotextile (Building 6)	119	x	71 x N/A	8,449 SF	
			Total:	66,181 SF	

Notes:

1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.
2. Assumed density of 4 psf for wood roofing.
3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.
4. Assumed density of 2 tons/CY for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING AREA					
Area (Building 2 & 2A)	275	89	N/A	24,475 SF	
Area (Building 3/4 & 4A)	275	142	N/A	39,050 SF	
Area Between Buildings 2 & 3/4	100	30	N/A	3,000 SF	
			Total:	66,525 SF	
MASONRY⁽¹⁾					
Wall - PCB Contaminated < 500 ppm	1452	1	20	1,377 Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
			Total:	1,377 Tons	
Glass⁽¹⁾					
Wall	1452	N/A	20	15 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
			Total:	15 Tons	

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Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
CONCRETE ⁽⁴⁾					
Above Grade Concrete					
Slab on Grade (Building 2 & 2A) - Non-Hazardous	275	x	89 x 0.35	642 Tons	Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Slab on Grade (Building 3/4 & 4A) - Non-Hazardous	275	x	142 x 0.67	1,928 Tons	
Slab on Grade (Area Between Buildings 2 & 3/4) - Non-Hazardous	100	x	30 x 0.46	102 Tons	
Total:				2,672 Tons	
Below Grade Concrete					
Footings (Standard Tee) - Non-Hazardous	135	x	Refer to Excavation Section on Assumptions Sheet	60 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm	159	x	Refer to Excavation Section on Assumptions Sheet	71 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm	588	x	Refer to Excavation Section on Assumptions Sheet	261 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	10	x	Refer to Excavation Section on Assumptions Sheet	4 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	304	x	Refer to Excavation Section on Assumptions Sheet	135 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	656	x	Refer to Excavation Section on Assumptions Sheet	292 Tons	
Total:				823 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
EXCAVATION (1:1 SIDE SLOPES) ^(a)					
Excavation for Footers - Non-Hazardous	135	x	Refer to Excavation Section on Assumptions Sheet	178 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	159	x	Refer to Excavation Section on Assumptions Sheet	210 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	588	x	Refer to Excavation Section on Assumptions Sheet	776 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	10	x	Refer to Excavation Section on Assumptions Sheet	13 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	304	x	Refer to Excavation Section on Assumptions Sheet	401 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	656	x	Refer to Excavation Section on Assumptions Sheet	866 Tons	
Total:				2,445 Tons	
SLAB RESTORATION (SLAB ± 20 feet)					
3-inch Bituminous Surface Course	295	x	281 x N/A	9,212 SY	See Assumptions Sheet for calculations.
9-Inch Dense Graded Subbase Aggregate ^(b)	295	x	281 x 0.75	10,467 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ^(b)	N/A	x	N/A x	3,526 Tons	Equals volume for footers and soil removed from site.
Total:				13,992 Tons	



Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 2

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)				TOTAL QUANTITY	REMARKS
	Length	x	Width	x	Height	
Geotextile Fabric	295	x	281	x	N/A	82,895 SF
<p>Notes:</p> <p>1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.</p> <p>2. Assumed density of 4 psf for wood roofing.</p> <p>3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.</p> <p>4. Assumed density of 2 tons/CY for concrete.</p> <p>5. Assumed density of 120 pcf for soil.</p> <p>6. Assumed density of 140 pcf for dense graded aggregate.</p> <p>General Notes:</p> <p>1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface course, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.</p>						

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING AREA					
Area	274	x 160	x N/A	43,840 SF	
				Total: 43,840 SF	
MASONRY⁽¹⁾					Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
Wall - PCB Contaminated < 500 ppm	370	x 1	x 15	263 Tons	
Wall - PCB Contaminated > 500 ppm	500	x 1	x 15	356 Tons	
				Total: 619 Tons	
Glass⁽¹⁾					Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Wall	870	x N/A	x 15	6.5 Tons	
				Total: 7 Tons	
WOOD⁽²⁾					Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking	274	x 160	x N/A	88 Tons	
				Total: 88 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
ROOFING MATERIALS ⁽³⁾					
Roofing Materials	274	x	160 x N/A	329 Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Total:				329 Tons	
STEEL FRAMING MEMBERS					
10 Columns - W12 x 65 at 20' High	10	x	N/A x 20	7 Tons	Assumed column weight of 65 pounds per foot.
Beams - W18 x 35	162	x	N/A x N/A	3 Tons	Assumed beam weight of 35 pounds per foot.
Total:				9 Tons	
CONCRETE ⁽⁴⁾					
Above Grade Concrete					
Slab on Grade - PCB Contaminated < 500 ppm	274	x	160 x 0.38	1,218 Tons	Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Total:				1,218 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
Below Grade Concrete					
Footings (Standard Tee) - Non-Hazardous	180	x	Refer to Excavation Section on Assumptions Sheet	80 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm	211	x	Refer to Excavation Section on Assumptions Sheet	94 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm	380	x	Refer to Excavation Section on Assumptions Sheet	169 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	22	x	Refer to Excavation Section on Assumptions Sheet	10 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	324	x	Refer to Excavation Section on Assumptions Sheet	144 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:				496 Tons	
EXCAVATION (1:1 SIDE SLOPES) ^(B)					
Excavation for Footers - Non-Hazardous	180	x	Refer to Excavation Section on Assumptions Sheet	238 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	211	x	Refer to Excavation Section on Assumptions Sheet	279 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	380	x	Refer to Excavation Section on Assumptions Sheet	502 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	22	x	Refer to Excavation Section on Assumptions Sheet	29 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	324	x	Refer to Excavation Section on Assumptions Sheet	428 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:				1,474 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 3

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height	
SLAB RESTORATION (SLAB + 20 feet)						
3-Inch Bituminous Surface Course	294	x	180	x	N/A	5,881 SY See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate ⁽⁶⁾	294	x	180	x	0.75	5,279 Tons See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾	N/A	x	N/A	x	N/A	2,051 Tons Equals volume for footers and soil removed from site.
Geotextile Fabric	294	x	180	x	N/A	52,920 SF
Total: 7,329 Tons 52,920 SF						
Notes: 1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass. 2. Assumed density of 4 psf for wood roofing. 3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials. 4. Assumed density of 2 tons/CY for concrete. 5. Assumed density of 120 pcf for soil. 6. Assumed density of 140 pcf for dense graded aggregate.						
General Notes: 1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.						



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING AREA					
Area	257	44	N/A	11,308 SF	
				Total: 11,308 SF	
MASONRY⁽¹⁾					Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
Wall - Non-Hazardous	602	1	14.67	419 Tons	
				Total: 419 Tons	
Glass⁽¹⁾					Glass quantities Included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site. 80% deducted for masonry see note 1.
Wall	602	N/A	14.67	4 Tons	
				Total: 4 Tons	



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS		
	Length	Width	Height				
ROOFING MATERIALS ⁽²⁾							
Roofing Materials	257	x	44	x	N/A	85 Tons	Roofing Materials quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
STEEL FRAMING MEMBERS						85 Tons	
3 Columns - HSS6 x 6 x 1/2 at 14.67' High	3	x	N/A	x	14.67	0.9 Tons	Assumed column weight of 42 pounds per foot.
Beams - W8 x 24	44	x	N/A	x	N/A	0.5 Tons	Assumed beam weight of 24 pounds per foot.
Total:						1.5 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS	
	Length	x	Width	x	Height		
CONCRETE ⁽³⁾							
Above Grade Concrete							
Slab on Grade - Non-Hazardous	257	x	44	x	0.63	524 Tons	Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and
Roof	257	x	44	x	0.5	419 Tons	
Total:						942 Tons	
Below Grade Concrete							
Footings (Standard Tee) - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm	67	x	Refer to Excavation Section on Assumptions Sheet			30 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm	269	x	Refer to Excavation Section on Assumptions Sheet			120 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	120	x	Refer to Excavation Section on Assumptions Sheet			53 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	140	x	Refer to Excavation Section on Assumptions Sheet			62 Tons	
Total:						265 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS	
	Length	x	Width	x	Height		
EXCAVATION (1:1 SIDE SLOPES) ⁽⁹⁾							
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	67	x	Refer to Excavation Section on Assumptions Sheet			88 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	269	x	Refer to Excavation Section on Assumptions Sheet			355 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	120	x	Refer to Excavation Section on Assumptions Sheet			158 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	140	x	Refer to Excavation Section on Assumptions Sheet			185 Tons	
Total:					786 Tons		
SLAB RESTORATION (SLAB + 20 feet)							
3-inch Bituminous Surface Course	277	x	64	x	N/A	1,970 SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate ⁽⁵⁾							
	277	x	64	x	0.75	1,229 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾							
	N/A	x	N/A	x	N/A	1,167 Tons	Equals volume for footers and soil removed from site.
Total:					2,396 Tons		



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 4

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height	
Geotextile Fabric	277	x	64	x	N/A	17,728 SF
<p>Notes:</p> <p>1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.</p> <p>2. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.</p> <p>3. Assumed density of 2 tons/CY for concrete.</p> <p>4. Assumed density of 120 pcf for soil.</p> <p>5. Assumed density of 140 pcf for dense graded aggregate.</p> <p>General Notes:</p> <p>1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.</p>						

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING AREA					
Area (Building 9, 9A, & 9B)	201	185	N/A	37,185 SF	
Area (Building 9C)	55	35	N/A	1,925 SF	
Area (Building 17)	20	20	N/A	400 SF	
	Total:			39,510 SF	
MASONRY⁽¹⁾					
BUILDING 9, 9A, 9B, 9C					Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
Wall - Non-Hazardous	240	1	15	171 Tons	
Wall - PCB Contaminated < 500 ppm	700	1	15	498 Tons	
	Total:			668 Tons	
BUILDING 17					Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
Wall - PCB Contaminated < 500 ppm	80	1	15	57 Tons	
	Total:			57 Tons	



Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
Glass⁽¹⁾					
BUILDING 9, 9A, 9B, 9C					
Wall	952	N/A	15	7 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Saw Tooth Trusses				Total:	
				7 Tons	
Glass for 3 Trusses (80% Deducted for Wood and Roofing Materials)	201	N/A	40	12 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for Wood and Roofing Materials.
BUILDING 17				Total:	
				12 Tons	
North Wall	80	N/A	15	0.60 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
				Total:	
				1 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
WOOD ⁽²⁾					
Roof Decking (Building 9, 9A, & 9B)	201	x	185 x N/A	74 Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking (Building 9C)	55	x	35 x N/A	4 Tons	
Roof Decking for 3 Saw Tooth Trusses (20% Deducted for Glass)	201	x	40 x N/A	39 Tons	
Roof Decking (Building 17)	20	x	20 x N/A	1 Tons	
Total:				118 Tons	
ROOFING MATERIALS ⁽³⁾					
Roofing Materials (Building 9, 9A, & 9B)	201	x	185 x N/A	279 Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing Materials (Building 9C)	55	x	35 x N/A	14 Tons	
Roofing Materials for 3 Saw Tooth Trusses (20% Deducted for Glass)	201	x	40 x N/A	145 Tons	
Roofing Materials (Building 17)	20	x	20 x N/A	3 Tons	
Total:				441 Tons	
STEEL FRAMING MEMBERS					
40 Columns - W12 x 65 at 15' High	40	x	N/A x 15	20 Tons	Assume column weight of 65 pounds per foot.
Beams - W18 x 35	1665	x	N/A x N/A	29 Tons	Assume beam weight of 35 pounds per foot.
Total:				49 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		Length	x	Width x Height		
CONCRETE ⁽⁴⁾						
Above Grade Concrete						
Slab on Grade (Building 9, 9A, 9B, & 9C) - Non-Hazardous		169	x	175 x 0.58	1,217 Tons	Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Slab on Grade (Building 9, 9A, 9B, & 9C) - PCB Contaminated < 500 ppm		91	x	95 x 0.56	356 Tons	
Slab on Grade (Building 17)		20	x	20 x 0.46	14 Tons	
Total:					1,586 Tons	
Below Grade Concrete						
BUILDING 9, 9A, 9B, 9C						
Footings (Standard Tee) - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm		293	x	Refer to Excavation Section on Assumptions Sheet	130 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm		599	x	Refer to Excavation Section on Assumptions Sheet	266 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)		167	x	Refer to Excavation Section on Assumptions Sheet	74 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)		409	x	Refer to Excavation Section on Assumptions Sheet	182 Tons	
Total:					652 Tons	

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		Length	x	Width x Height		
BUILDING 17						
Footings (Standard Tee) - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm		80	x	Refer to Excavation Section on Assumptions Sheet	36 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:					36 Tons	
EXCAVATION (1:1 SIDE SLOPES) ⁽⁹⁾						
BUILDING 9, 9A, 9B, 9C						
Excavation for Footers - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		293	x	Refer to Excavation Section on Assumptions Sheet	387 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		599	x	Refer to Excavation Section on Assumptions Sheet	791 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		167	x	Refer to Excavation Section on Assumptions Sheet	220 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		409	x	Refer to Excavation Section on Assumptions Sheet	540 Tons	
Total:					1,938 Tons	



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		Length	x	Width x Height		
BUILDING 17						
Excavation for Footers - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		80	x	Refer to Excavation Section on Assumptions Sheet	106 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:					106 Tons	
SLAB RESTORATION (SLAB + 20 feet)						
3-inch Bituminous Surface Course		276	x	205 x N/A	6,287 SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate ⁽⁶⁾		276	x	205 x 0.75	6,015 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾		N/A	x	N/A x	3,034 Tons	Equals volume for footers and soil removed from site.
Total:					9,049 Tons	



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 5

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)				TOTAL QUANTITY	REMARKS
	Length	x	Width	x	Height	
Geotextile Fabric	276	x	205	x	N/A	SF
<div>Notes:</div> <div>1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.6 tons/cy for masonry and 5 psf for glass.</div> <div>2. Assumed density of 4 psf for wood roofing.</div> <div>3. Assumed density of 3 psf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 psf for roofing materials.</div> <div>4. Assumed density of 2 tons/CY for concrete.</div> <div>5. Assumed density of 120 pcf for soil.</div> <div>6. Assumed density of 140 pcf for dense graded aggregate.</div> <div>General Notes:</div> <div>1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.</div>						

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width	x	
BUILDING AREA					
Area (Building 10)	104	x	50	x	N/A 5,200 SF
Area (Building 10A)	40	x	20	x	N/A 800 SF
			Total:		6,000 SF
STEEL - SIDING⁽¹⁾					
BUILDING 10					
Wall - PCB Contaminated < 500 ppm	308	x	1/8	x	11 9 Tons
			Total:		9 Tons
BUILDING 10A					
Wall - Non-Hazardous	120	x	1/8	x	10 3 Tons
			Total:		3 Tons
STEEL - ROOFING⁽¹⁾					
Roofing (Building 10) - Non-Hazardous	104	x	50	x	3/8 40 Tons
Roofing (Building 10A) - Non-Hazardous	40	x	20	x	3/8 6 Tons
			Total:		46 Tons

Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.

Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.

Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.

Cornell-Dubillier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
		Length	x	Width	x	Height	
STEEL FRAMING MEMBERS							
No Information Available		N/A	x	N/A	x	N/A	0 Tons
CONCRETE ⁽²⁾							
Above Grade Concrete							
Slab on Grade (Building 10) - Non-Hazardous		104	x	50	x	0.5	193 Tons
Slab on Grade (Building 10A) - Non-Hazardous		40	x	20	x	0.5	15 CY
		Total:					207 Tons
Below Grade Concrete							
BUILDING 10							
Footings (Standard Tee) - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons
Footings (Standard Tee) - TSCA Waste < 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons
Footings (Standard Tee) - TSCA Waste > 500 ppm		440	x	Refer to Excavation Section on Assumptions Sheet			196 Tons
Footings (Standard Tee) - RCRA Waste - (Falling TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)		30	x	Refer to Excavation Section on Assumptions Sheet			13 Tons
		Total:					209 Tons
Non-hazardous above grade concrete quantities are Included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are Included under the unit prices item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.							
Non-hazardous below grade concrete quantities are Included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are Included under the unit prices item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.							

Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		Length	x	Width x Height		
BUILDING 10A						
Footings (Standard Tee) - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm		66	x	Refer to Excavation Section on Assumptions Sheet	29 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)		32	x	Refer to Excavation Section on Assumptions Sheet	14 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)		61	x	Refer to Excavation Section on Assumptions Sheet	27 Tons	
Total:					71 Tons	
EXCAVATION (1:1 SIDE SLOPES) ^(B)						
BUILDING 10						
Excavation for Footers - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		440	x	Refer to Excavation Section on Assumptions Sheet	581 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		30	x	Refer to Excavation Section on Assumptions Sheet	40 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 6

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
BUILDING 10A			Total:	620 Tons	
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	66	x	Refer to Excavation Section on Assumptions Sheet	87 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	32	x	Refer to Excavation Section on Assumptions Sheet	42 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	61	x	Refer to Excavation Section on Assumptions Sheet	81 Tons	
			Total:	210 Tons	
SLAB RESTORATION (SLAB + 20 feet)					
3-Inch Bituminous Surface Course (Building 10)	124	x	70 x N/A	965 SY	See Assumptions Sheet for calculations.
3-Inch Bituminous Surface Course (Building 10A)	60	x	40 x N/A	267 SY	See Assumptions Sheet for calculations.
			Total:	1,231 SY	



General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface course, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING Area					
Area (Building 11)	200	x 40	x N/A	8,000 SF	
Area (Building 12)	200	x 40	x N/A	8,000 SF	
			Total:	16,000 SF	
STEEL - SIDING					
BUILDING 11					
Wall - Non-Hazardous	480	x 1/8	x 20.33	25 Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
			Total:	25 Tons	
BUILDING 12					
Wall - PCB Contaminated < 500 ppm	240	x 1/8	x 20.33	12 Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Wall - PCB Contaminated > 500 ppm	240	x 1/8	x 20.33	12 Tons	
			Total:	25 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width	x	
STEEL - FRAMING MEMBERS⁽¹⁾					
Building 11	200	x	N/A	x 20.33	24 Tons
Building 12	200	x	N/A	x 20.33	24 Tons
				Total:	49 Tons
CONCRETE⁽²⁾					
Above Grade Concrete					
Slab on Grade (Building 11) - Non-Hazardous	200	x	40	x 0.33	198 Tons
Slab on Grade (Building 12) - PCB Contaminated < 500 ppm	100	x	40	x 0.29	86 Tons
Slab on Grade (Building 12) - PCB Contaminated > 500 ppm	100	x	40	x 0.29	86 Tons
				Total:	370 Tons
Below Grade Concrete					
BUILDING 11					
Footings (Standard Tee) - Non-Hazardous	0	x			0 Tons
Footings (Standard Tee) - TSCA Waste < 500 ppm	253	x			112 Tons
Footings (Standard Tee) - TSCA Waste > 500 ppm	0	x			0 Tons
Footings (Standard Tee) - RCRA Waste - (Failing TCCLP)	0	x			0 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	329	x			146 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	0	x			0 Tons
				Total:	259 Tons

Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.

Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		Length	x	Width x Height		
BUILDING 12						
Footings (Standard Tee) - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm		352	x	Refer to Excavation Section on Assumptions Sheet	156 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - RCRA Waste - (Falling TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)		240	x	Refer to Excavation Section on Assumptions Sheet	107 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:					263 Tons	
EXCAVATION (1:1 SIDE SLOPES) ⁽¹⁾						
BUILDING 11						
Excavation for Footers - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		253	x	Refer to Excavation Section on Assumptions Sheet	334 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - RCRA Waste - (Falling TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		329	x	Refer to Excavation Section on Assumptions Sheet	434 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:					768 Tons	

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS		
		Length	x	Width	x	Height		
BUILDING 12								
Excavation for Footers - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		352	x	Refer to Excavation Section on Assumptions Sheet			465 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Excavation for Footers - RCRA Waste - (Falling TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		240	x	Refer to Excavation Section on Assumptions Sheet			317 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
					Total:		781 Tons	
SLAB RESTORATION (SLAB + 20 feet)								
3-Inch Bituminous Surface Course (Building 11)		220	x	61	x	N/A	1,491 SY	See Assumptions Sheet for calculations.
3-Inch Bituminous Surface Course (Building 12)		220	x	61	x	N/A	1,491 SY	See Assumptions Sheet for calculations.
					Total:		2,983 SY	
9-inch Dense Graded Subbase Aggregate ⁽⁵⁾ (Building 11)		220	x	61	x	0.75	919 Tons	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate ⁽⁵⁾ (Building 12)		220	x	61	x	0.75	919 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁵⁾		N/A	x	N/A	x	N/A	2,301 Tons	Equals volume for footers and soil removed from site.
					Total:		4,140 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 7

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width	x	Height
Geotextile Fabric (Building 11)	220	x	61	x	N/A
Geotextile Fabric (Building 12)	220	x	61	x	N/A
Total:				26,840	SF

Notes:

- Weight of light weight steel is 490 lbs/cf.
- Framing consists of 6-inch deep arch steel members 24-inches on center spacing at 12 pounds per foot.
- Assumed density of 2 tons/CY for concrete.
- Assumed density of 120 pcf for soil.
- Assumed density of 140 pcf for dense graded aggregate.

General Notes:

- Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface course, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width	x	
BUILDING AREA					
Area (Building 13)	103	x	42	x	N/A
Area (Building 15)	72	x	36	x	N/A
Area (Building 16)	64	x	58	x	N/A
Area (Building 18)	17	x	9	x	N/A
				Total:	10,783 SF
MASONRY⁽¹⁾					
BUILDING 13					
Wall - Non-Hazardous	145	x	1	x	19.5
					134 Tons
Wall - Metal Contamination	145	x	1	x	19.5
					134 Tons
				Total:	268 Tons
BUILDING 15					
Wall - Non-Hazardous	165	x	1	x	24
					188 Tons
Wall - Metal Contamination	37	x	1	x	24
					42 Tons
				Total:	230 Tons

Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.

Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width	x	
BUILDING 16					
Wall - Non-Hazardous	310	x	1	x 38	558 Tons
Wall - Metal Contamination	36	x	1	x 38	65 Tons
	Total:			623 Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
BUILDING 18					
Wall - Non-Hazardous	52	x	1	x 13.5	33 Tons
	Total:			33 Tons	Non-hazardous masonry quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous masonry quantities are included under the unit price item for Demolition, Handling / Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry. 20% deducted for windows see note 1.
Glass⁽¹⁾					
BUILDING 13					
Wall	290	x	N/A	x 19.5	3 Tons
	Total:			3 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
BUILDING 15					
Wall	216	x	N/A	x 24	2.6 Tons
	Total:			2.6 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING 16					
Wall	244	x N/A	x 38	4.6 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Total:				4.6 Tons	
BUILDING 18					
Wall	52	x N/A	x 14	0.4 Tons	Glass quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. 80% deducted for masonry see note 1.
Total:				0.4 Tons	
WOOD⁽¹⁾					
Roof Decking (Building 15)	72	x 36	x 1/2	5.2 Tons	
Roof Decking (Building 16)	64	x 58	x 1/2	7.4 Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Total:				13 Tons	
ROOFING MATERIALS⁽¹⁾					
Roofing Materials (Building 13)	103	x 42	x N/A	32 Tons	
Roofing Materials (Building 15)	72	x 36	x N/A	19 Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roofing Materials (Building 16)	64	x 58	x N/A	28 Tons	
Roofing Materials (Building 18)	17	x 9	x N/A	1 Tons	
Total:				81 Tons	



Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x Width	x Height		
STEEL FRAMING MEMBERS					
BUILDING 15					
3 Columns - W12 x 65 at 27' High	27	x	N/A	3	3 Tons
Beams - W18 x 35	180	x	N/A	3	3 Tons
	Total:			6	Tons
BUILDING 16					
3 Columns - W12 x 65 at 27' High	27	x	N/A	3	3 Tons
Beams - W8 x 21	150	x	N/A	2	2 Tons
Beams - W12 x 35	168	x	N/A	3	3 Tons
Roof Beams - W14 x 22	175	x	N/A	2	2 Tons
Beams - W24 x 55	256	x	N/A	7	7 Tons
	Total:			16	Tons

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x Width	x Height		
CONCRETE ⁽⁴⁾					
Above Grade Concrete					
Slab on Grade (Building 13) - Non-Hazardous	103	x 42	x 0.5	180 Tons	Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Slab on Grade (Building 15, 16, & 18) - Non-Hazardous	134	x 72	x 0.42	298 Tons	
Roof (Building 13) - Slab - Non-Hazardous	103	x 42	x 0.5	160 Tons	
Roof (Building 13) - 4 Beams (2' Deep x 1' Wide) - Non-Hazardous	271	x 2	x 1	20 Tons	
Roof (Building 18) - Slab - Non-Hazardous	17	x 9	x 0.5	6 Tons	
Roof (Building 18) - 6 Beams (2' Deep x 1' Wide) - Non-Hazardous	204	x 2	x 1	15 Tons	
Total:				659 Tons	
Below Grade Concrete					
BUILDING 13					
Footings (Standard Tee) - Non-Hazardous	15	x	Refer to Excavation Section on Assumptions Sheet	7 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm	315	x	Refer to Excavation Section on Assumptions Sheet	140 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	17	x	Refer to Excavation Section on Assumptions Sheet	8 Tons	
Total:				154 Tons	

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
BUILDING 15, 16, & 18					
Footings (Standard Tee) - Non-Hazardous	55	x	Refer to Excavation Section on Assumptions Sheet	24 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm	28	x	Refer to Excavation Section on Assumptions Sheet	12 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm	56	x	Refer to Excavation Section on Assumptions Sheet	25 Tons	
Footings (Standard Tee) - RCRA Waste - (Falling TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	287	x	Refer to Excavation Section on Assumptions Sheet	128 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	120	x	Refer to Excavation Section on Assumptions Sheet	53 Tons	
Total:				243 Tons	
BUILDING 15 - ADDITIONAL CONCRETE FOR BASEMENT					
Piers in Basement - Non-Hazardous	8	x	8	8 Tons	Six Piers Total
Basement SOG - Non-Hazardous	134	x	72	2 Tons	
Basement Walls - Non-Hazardous	35	x	1	10 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Basement Walls (Standard Tee) - TSCA Waste < 500 ppm	0	x	1	10 Tons	
Basement Walls (Standard Tee) - TSCA Waste > 500 ppm	28	x	1	10 Tons	
Basement Walls (Standard Tee) - RCRA Waste - (Falling TCLP)	0	x	1	10 Tons	
Basement Walls (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	114	x	1	10 Tons	
Basement Walls (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	35	x	1	10 Tons	
Total:				2,049 Tons	



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		Length	x	Width x Height		
EXCAVATION (1:1 SIDE SLOPES) ⁹						
BUILDING 13						
Excavation for Footers - Non-Hazardous		15	x	Refer to Excavation Section on Assumptions Sheet	20 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		315	x	Refer to Excavation Section on Assumptions Sheet	416 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		17	x	Refer to Excavation Section on Assumptions Sheet	22 Tons	
Total:					458 Tons	
BUILDING 15, 16, & 18						
Excavation for Footers - Non-Hazardous		55	x	Refer to Excavation Section on Assumptions Sheet	73 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm		28	x	Refer to Excavation Section on Assumptions Sheet	37 Tons	
Excavation for Footers - TSCA Waste > 500 ppm		56	x	Refer to Excavation Section on Assumptions Sheet	74 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)		287	x	Refer to Excavation Section on Assumptions Sheet	379 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)		120	x	Refer to Excavation Section on Assumptions Sheet	158 Tons	
Total:					721 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height		
BUILDING 15 - ADDITIONAL EXCAVATION FOR BASEMENT							
Excavation for Basement - Non-Hazardous	35	x	2	x	10	42 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Basement - TSCA Waste < 500 ppm	0	x	2	x	10	0 Tons	
Excavation for Basement - TSCA Waste > 500 ppm	28	x	2	x	10	34 Tons	
Excavation for Basement - RCRA Waste - (Failing TCLP)	0	x	2	x	10	0 Tons	
Excavation for Basement - Both TSCA/RCRA (TSCA < 500 ppm)	114	x	2	x	10	137 Tons	
Excavation for Basement - Both TSCA/RCRA (TSCA > 500 ppm)	35	x	2	x	10	42 Tons	
Total:						254 Tons	
SLAB RESTORATION (SLAB + 20 feet)							
3-inch Bituminous Surface Course (Building 13)	123	x	62	x	N/A	847 SY	See Assumptions Sheet for calculations.
3-Inch Bituminous Surface Course (Building 15, 16, & 18)	154	x	92	x	N/A	1,574 SY	See Assumptions Sheet for calculations.
Total:						2,422 SY	
9-Inch Dense Graded Subbase Aggregate ⁽⁹⁾ (Building 13)	123	x	62	x	0.75	524 Tons	See Assumptions Sheet for calculations.
9-Inch Dense Graded Subbase Aggregate ⁽⁹⁾ (Building 15, 16, & 18)	154	x	92	x	0.75	1,086 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Basement ⁽⁶⁾ (Building 15)	134	x	72	x	12	8,104 Tons	See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾	N/A	x	N/A	x	N/A	1,989 Tons	Equals volume for footers and soil removed from site.
Total:						11,683 Tons	

Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.

See Assumptions Sheet for calculations.

See Assumptions Sheet for calculations.

See Assumptions Sheet for calculations.

See Assumptions Sheet for calculations.

See Assumptions Sheet for calculations.

Equals volume for footers and soil removed from site.



Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 8

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
Geotextile Fabric (Building 13)	123	62	x	7,626 SF	
Geotextile Fabric (Building 15, 16, & 18)	154	92	x	14,168 SF	
Total:				21,794 SF	

Notes:

1. 20% deducted from total wall area for windows. Assumed 1.30 tons/cy for 8 inch CMU w/ 1/3 voids and 0.3 tons/cy of brick for a total of 1.8 tons/cy for masonry and 5 pcf for glass.
2. Assumed density of 4 pcf for wood roofing.
3. Assumed density of 3 pcf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 pcf for roofing materials.
4. Assumed density of 2 tons/cy for concrete.
5. Assumed density of 120 pcf for soil.
6. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, blutinous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.



Cornell-Dubillier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	Width	Height		
BUILDING AREA					
Area	67	27	N/A	1,809 SF	
			Total:	1,809 SF	
WOOD⁽¹⁾					
Wall - Non-Hazardous	188	N/A	15	6 Tons	Wood quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
Roof Decking - Non-Hazardous	67	27	N/A	3.6 Tons	
			Total:	9.3 Tons	
ROOFING MATERIALS⁽²⁾					
Roofing Materials	67	27	N/A	14 Tons	Roofing Material quantities included in Bid Schedule under the lump sum item for Asbestos Abatement.
			Total:	14 Tons	
STEEL FRAMING MEMBERS					
N/A	N/A	N/A	N/A	0 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS		
		Length	x	Width	x		Height	
CONCRETE ⁽³⁾								
Above Grade Concrete								
Slab on Grade - Non-Hazardous		67	x	27	x	0.5	67 Tons	Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
		Total:					67 Tons	
Below Grade Concrete								
Footings (Standard Tee) - Non-Hazardous		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footings (Standard Tee) - TSCA Waste < 500 ppm		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Footings (Standard Tee) - TSCA Waste > 500 ppm		244	x	Refer to Excavation Section on Assumptions Sheet			108 Tons	
Footings (Standard Tee) - RCRA Waste - (Failing TCLP)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)		0	x	Refer to Excavation Section on Assumptions Sheet			0 Tons	
		Total:					108 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
EXCAVATION (1:1 SIDE SLOPES) ^(a)					
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	244	x	Refer to Excavation Section on Assumptions Sheet	322 Tons	
Excavation for Footers - RCRA Waste - (Failing TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:				322 Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 9

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height	
SLAB RESTORATION (SLAB + 20 feet)						
3-inch Bituminous Surface Course	87	x	47	x	N/A	SY See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate ⁽⁵⁾	87	x	47	x	0.75	Tons See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾	N/A	x	N/A	x	N/A	Tons Equals volume for footers and soil removed from site.
Geotextile Fabric	87	x	47	x	N/A	SF Total: 743 Tons 4,089 SF
Notes: 1. Assumed density of 4 pcf for wood roofing. 2. Assumed density of 3 pcf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 pcf for roofing materials. 3. Assumed density of 2 tons/CY for concrete. 4. Assumed density of 120 pcf for soil. 5. Assumed density of 140 pcf for dense graded aggregate. General Notes: 1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface course, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.						

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 10

95% Completion Phase

TYPE / LOCATION	D/A	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
		x	Height	x	Thickness	
EXCAVATION (1:1 SIDE SLOPES)⁽¹⁾						
Excavation Non-Hazardous	0	x	0	x	N/A	0 Tons
Excavation - TSCA Waste < 500 ppm	30	x	6	x	N/A	191 Tons
Excavation - TSCA Waste > 500 ppm	0	x	0	x	N/A	0 Tons
Excavation - RCRA Waste - (Failing TCLP)	0	x	0	x	N/A	0 Tons
Excavation - Both TSCA/RCRA (TSCA < 500 ppm)	30	x	6	x	N/A	64 Tons
Excavation - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	0	x	N/A	0 Tons
Total:					254	Tons

Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse. (See Scenario No. 2 on Assumptions Sheet)

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 10

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	DIA	x	Height	x	Thickness
CONCRETE⁽³⁾ - BELOW GRADE					
Piers - Non-Hazardous	0	x	0	x	0 Tons
Piers - TSCA Waste < 500 ppm	6	x	6	x	7 Tons
Piers - TSCA Waste > 500 ppm	0	x	0	x	0 Tons
Piers - RCRA Waste - (Failing TCLP)	0	x	0	x	0 Tons
Piers - Both TSCA/RCRA (TSCA < 500 ppm)	6	x	6	x	3 Tons
Piers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	0	x	0 Tons
Total:				27	Tons

Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 10

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)					TOTAL QUANTITY	REMARKS
	DIA	x	Height	x	Thickness		
STEEL⁽³⁾							
Water Tower	30	x	25	x	0.03125	18 Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Top and Bottom Sections	30	x	N/A	x	0.03125	5 Tons	
					Total:	23 Tons	
SLAB RESTORATION (SLAB + 20 feet)							
3-inch Bituminous Surface Course	50	x	N/A	x	N/A	218 SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate⁽⁴⁾							
	50	x	0.75	x	N/A	163 Tons	See Assumptions Sheet for calculations. Equals volume for footers and soil removed from site.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁵⁾	N/A	x	N/A	x	N/A	322 Tons	
					Total:	486 Tons	
Geotextile Fabric	50	x	N/A	x	N/A	1,963 SF	
Notes: 1. Assumed density of 120 pcf for soil. 2. Assumed density of 2 tons/CY for concrete. 3. Weight of light weight steel is 490 lbs/cf 4. Assumed density of 140 pcf for dense graded aggregate.							
General Notes: 1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface coarse, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.							

Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.

See Assumptions Sheet for calculations.

See Assumptions Sheet for calculations.

Equals volume for footers and soil removed from site.



Cornell-Dubiller Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Cluster 11
95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height	
BUILDING AREA	102	x	51	x	N/A	
Area						
					5,202 SF	
					Total: 5,202 SF	
WOOD ⁽¹⁾						
Walls	308	x	N/A	x	14	9 Tons
Roofing	308	x	51	x	N/A	31 Tons
					Total: 40 Tons	Wood quantities Included in Bid Schedule under the lump sum item for Asbestos Abatement.
ROOFING MATERIALS ⁽²⁾						
Roofing Materials	102	x	51	x	N/A	39 Tons
					Total: 39 Tons	Roofing Material quantities Included in Bid Schedule under the lump sum item for Asbestos Abatement.

Cornell-Dubiller Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 11

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height	
STEEL FRAMING MEMBERS						
N/A	N/A	x	N/A	x	N/A	0 Tons
CONCRETE⁽¹⁾						
Above Grade Concrete						
Slab on Grade - Non-Hazardous	102	x	51	x	0.38	145 Tons
Total:						145 Tons
Below Grade Concrete						
Footings (Standard Tee) - Non-Hazardous	0	x			Refer to Excavation Section on Assumptions Sheet	0 Tons
Footings (Standard Tee) - TSCA Waste < 500 ppm	72	x			Refer to Excavation Section on Assumptions Sheet	32 Tons
Footings (Standard Tee) - TSCA Waste > 500 ppm	116	x			Refer to Excavation Section on Assumptions Sheet	52 Tons
Footings (Standard Tee) - RCRA Waste - (Falling TCLP)	0	x			Refer to Excavation Section on Assumptions Sheet	0 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA < 500 ppm)	81	x			Refer to Excavation Section on Assumptions Sheet	36 Tons
Footings (Standard Tee) - Both TSCA/RCRA (TSCA > 500 ppm)	0	x			Refer to Excavation Section on Assumptions Sheet	0 Tons
Total:						120 Tons

Non-hazardous above grade concrete quantities are included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal. Hazardous above grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.

Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.



Cornell-Dubillier Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Cluster 11
95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS
	Length	x	Width x Height		
EXCAVATION (1:1 SIDE SLOPES) ⁽⁶⁾					
Excavation for Footers - Non-Hazardous	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse.
Excavation for Footers - TSCA Waste < 500 ppm	72	x	Refer to Excavation Section on Assumptions Sheet	95 Tons	
Excavation for Footers - TSCA Waste > 500 ppm	116	x	Refer to Excavation Section on Assumptions Sheet	153 Tons	
Excavation for Footers - RCRA Waste - (Falling TCLP)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA < 500 ppm)	81	x	Refer to Excavation Section on Assumptions Sheet	107 Tons	
Excavation for Footers - Both TSCA/RCRA (TSCA > 500 ppm)	0	x	Refer to Excavation Section on Assumptions Sheet	0 Tons	
Total:				355 Tons	



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 11

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
	Length	x	Width	x	Height	
SLAB RESTORATION (SLAB + 20 feet)						
3-Inch Bituminous Surface Course	122	x	71	x	N/A	963 SY See Assumptions Sheet for calculations.
9-Inch Dense Graded Subbase Aggregate ⁽⁶⁾	122	x	71	x	0.75	616 Tons See Assumptions Sheet for calculations.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾	N/A	x	N/A	x	N/A	527 Tons Equals volume for footers and soil removed from site.
Geotextile Fabric	122	x	71	x	N/A	8,862 SF
Total: 1,143 Tons						

Notes:

1. Assumed density of 4 pcf for wood roofing.
2. Assumed density of 3 pcf for 1 layer of asphalt shingles, assuming 5 layers, the total density is 15 pcf for roofing materials.
3. Assumed density of 2 tons/CY for concrete.
4. Assumed density of 120 pcf for soil.
5. Assumed density of 140 pcf for dense graded aggregate.

General Notes:

1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface course, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 12

95% Completion Phase

TYPE / LOCATION	DIMENSIONS (FEET)			TOTAL QUANTITY	REMARKS		
	DIA	Height	Thickness				
EXCAVATION (1:1 SIDE SLOPES) ⁽¹⁾							
Excavation Non-Hazardous	0	x	0	x	N/A	0 Tons	Excavation quantities included in Bid Schedule under unit price items for hazardous and non-hazardous soil disposal and reuse. (See Scenario No. 2 on Assumptions Sheet).
Excavation - TSCA Waste < 500 ppm	0	x	0	x	N/A	0 Tons	
Excavation - TSCA Waste > 500 ppm	0	x	0	x	N/A	0 Tons	
Excavation - RCRA Waste - (Failing TCLP)	0	x	0	x	N/A	0 Tons	
Excavation - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	0	x	N/A	0 Tons	
Excavation - Both TSCA/RCRA (TSCA > 500 ppm)	27	x	6	x	N/A	206 Tons	
Total:					206	Tons	

Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

Quantity Take-Off

Cluster 12

95% Completion Phase

TYPE / LOCATION		DIMENSIONS (FEET)			THICKNESS	TOTAL QUANTITY	REMARKS
	DIA	x	Height	x			
CONCRETE ⁽²⁾ - BELOW GRADE							
Footling Ring - Non-Hazardous	0	x	0	x	1.5	0 Tons	Non-hazardous below grade concrete quantities are included in Bid Schedule under the lump sum item for Below Grade Structure Demolition and Off Site Disposal. Hazardous below grade concrete quantities are included under the unit price item for Demolition, Handling/Stockpiling, Sampling, and Off Site Disposal of Hazardous Concrete and Masonry.
Footling Ring - TSCA Waste < 500 ppm	0	x	0	x	1.5	0 Tons	
Footling Ring - TSCA Waste > 500 ppm	0	x	0	x	1.5	0 Tons	
Footling Ring - RCRA Waste - (Failing TCLP)	0	x	0	x	1.5	0 Tons	
Footling Ring - Both TSCA/RCRA (TSCA < 500 ppm)	0	x	0	x	1.5	0 Tons	
Footling Ring - Both TSCA/RCRA (TSCA > 500 ppm)	27	x	4	x	1.5	38 Tons	
Total:						38 Tons	
STEEL ⁽²⁾							
Water Tower	27	x	30	x	0.03125	19 Tons	Steel quantities included in Bid Schedule under the lump sum item for Above Grade Structure Demolition and Off Site Disposal.
Top and Bottom Sections	27	x	N/A	x	0.03125	4 Tons	
Total:						24 Tons	



Cornell-Dubilier Electronics Superfund Site
OU-2 - Building Demolition
Quantity Take-Off
Cluster 12
95% Completion Phase

TYPE / LOCATION	DIA	DIMENSIONS (FEET)			TOTAL QUANTITY		REMARKS
		x	Height	x	Thickness		
SLAB RESTORATION (SLAB + 20 feet)							
3-inch Bituminous Surface Course	47	x	N/A	x	N/A	193 SY	See Assumptions Sheet for calculations.
9-inch Dense Graded Subbase Aggregate ⁽⁴⁾	47	x	0.75	x	N/A	143 Tons	See Assumptions Sheet for calculations. Equals volume for footers and soil removed from site.
Additional Dense Graded Aggregate For Trench & Soil Removed From Site ⁽⁶⁾	N/A	x	N/A	x	N/A	276 Tons	
					Total:	419 Tons	
Geotextile Fabric	47	x	N/A	x	N/A	1,735 SF	
Notes: 1. Assumed density of 120 pcf for soil. 2. Assumed density of 2 tons/CY for concrete. 3. Weight of light weight steel is 490 lbs/cf 4. Assumed density of 140 pcf for dense graded aggregate. General Notes: 1. Unit quantities shown on this spread sheet for below grade concrete, excavation, bituminous surface course, dense graded aggregate, and geotextile have been rounded up to the nearest 10 on the Bid Schedule and Opinion of Probable Construction Cost for contingency purposes. See Pricing Back-Up Derivations (provided under separate cover) for further assumptions and clarifications.							



Cornell-Dubilier Electronics Superfund Site

OU-2 - Building Demolition

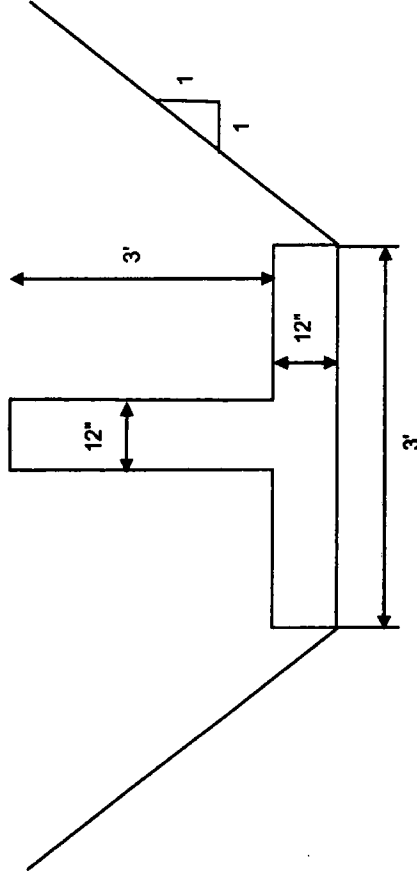
Quantity Take-Off

Assumptions

95% Completion Phase

Excavation Section:

Standard tee footing with 1:1 side slope



Volume of Dense Graded Aggregate Subbase:

$$V = (L \times W \times H) + (W \times (1/2 \times 0.0075b^2) \times 2 \text{ sides})$$

$$\text{Area of Triangle} = 1/2 \times b \times h$$

$$h = 0.015b$$

$$\text{Therefore, Area} = 1/2 \times 0.0075b^2$$

Surface Area of Bituminous Surface Course:

$$SA = (W \times (b^2 + (0.015b^2)^{1/2}) \times 2 \text{ sides})$$

$$p^2 = b^2 + h^2$$

$$\text{Therefore, } p = (b^2 + (0.015b^2)^{1/2})^{1/2}$$

